



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

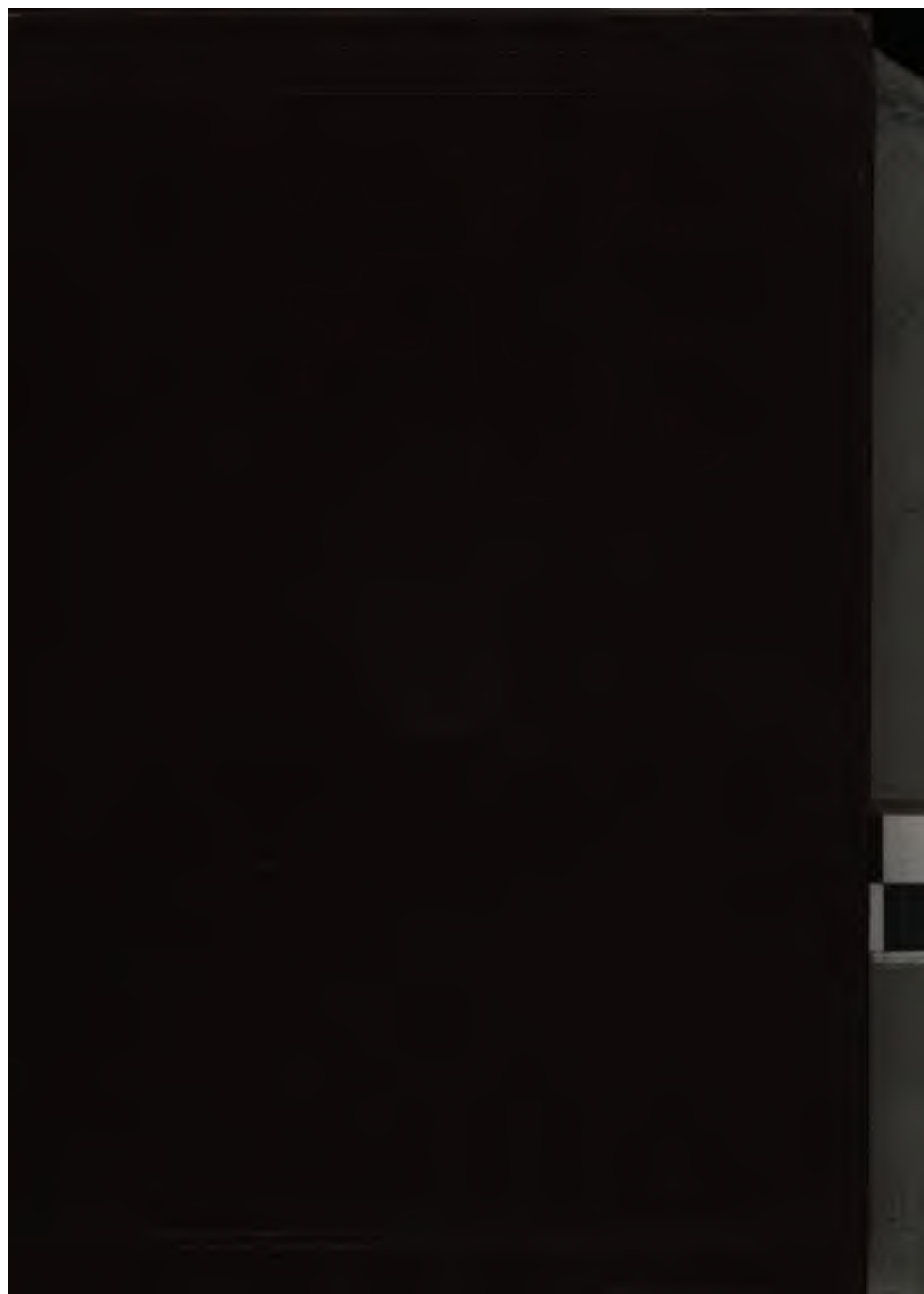
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

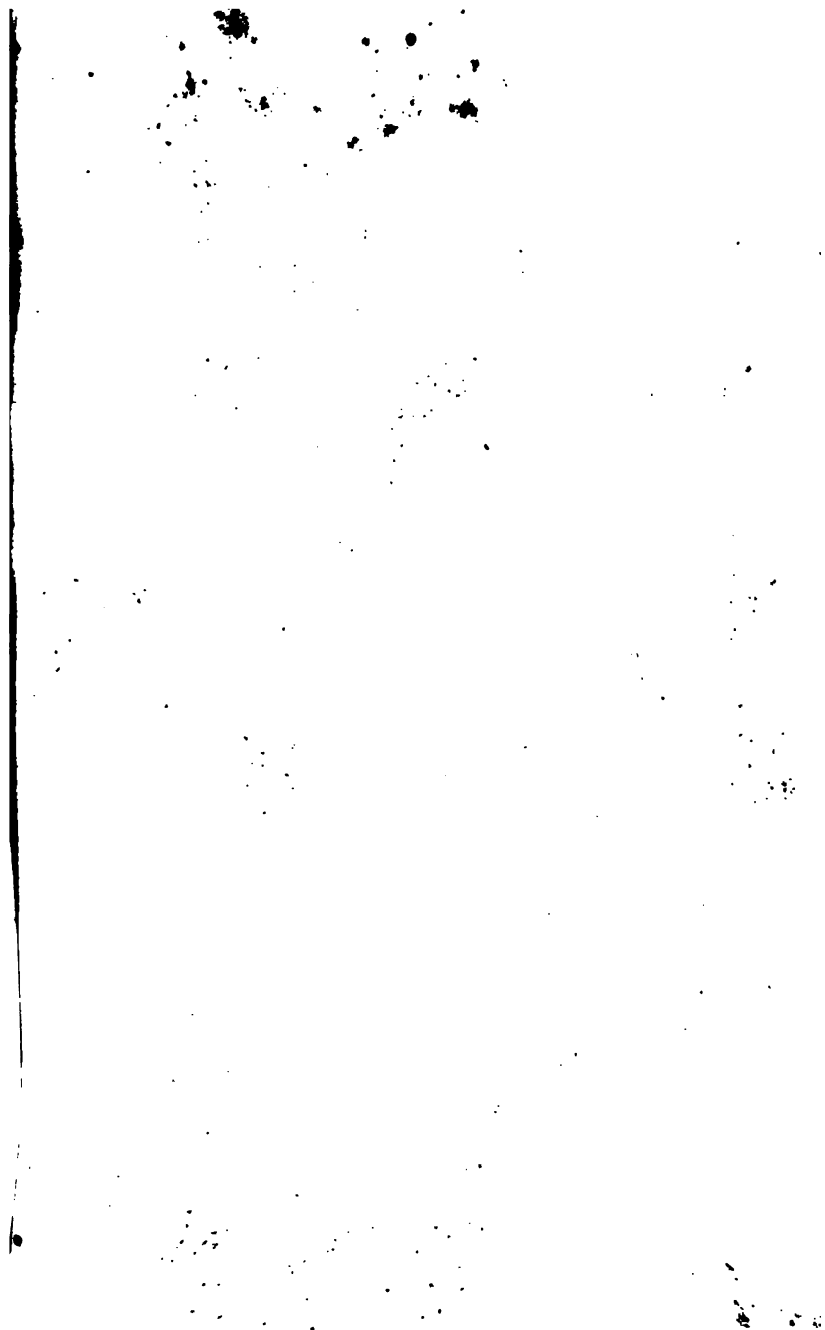
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>





**A SCHOOL
PHYSICAL AND DESCRIPTIVE
GEOGRAPHY**

By the same Author,

A F R I C A

(Stanford's Compendium of Geography and Travel.)

Based on Hellwald's "Die Erde und Ihre Völker."

With Ethnological Appendix by A. H. KEANE, M.A.I.

Large post 8vo, cloth gilt, with 16 Maps and Diagrams, and
68 Illustrations, 21s.

Also, Second Edition,

PHYSICAL, HISTORICAL, POLITICAL, AND DESCRIPTIVE GEOGRAPHY.

Large post 8vo, cloth, with Illustrations and 20 Maps, 12s.

THE LONDON GEOGRAPHICAL SERIES.

A SCHOOL
PHYSICAL AND DESCRIPTIVE
GEOGRAPHY

By KEITH JOHNSTON, F.R.G.S.

EDITOR OF THE 'AFRICA' VOLUME IN 'STANFORD'S COMPENDIUM OF GEOGRAPHY AND TRAVEL ;
LATE LEADER OF THE ROYAL GEOGRAPHICAL SOCIETY'S EAST AFRICAN EXPEDITION

MAPS AND ILLUSTRATIONS

SECOND EDITION



LONDON

EDWARD STANFORD, 55, CHARING CROSS, S.W.

1882

201 L 77.

PREFACE TO FIRST EDITION.

THE cordial and appreciative reception accorded to the late Mr. Keith Johnston's "Geography," the second edition of which, revised by Mr. Ravenstein, has only recently been published, has induced me to bring out this cheaper edition, which is more especially intended for use in Schools. The whole of the strictly geographical information has been retained, but, by omitting the historical sketch, as well as the elaborately printed maps, it has become possible to reduce the price so considerably as to place the book within the reach not only of the teachers, but also of their pupils.

I shall at all times be happy to receive suggestions for improving a work which is evidently destined to take a permanent place in English Geographical literature.

E. S.

CONTENTS.

	PAGE
I. INTRODUCTORY CHAPTER	3
Explanation of "direction" and "distance"—The compass— The cardinal points—Boxing the compass—The mariner's compass—The sun's apparent path across the sky—The pole star—The "pace"—Natural scale—Mapping—Plan drawing —Surveying—Construction of sections—Exercises in map drawing.	
II. PHYSICAL GEOGRAPHY	21
1. Form and Dimensions of the Earth	21
Proof of the sphericity of the earth—The visible horizon— Measurement of an arc by Eratosthenes of Alexandria— Calculation of the earth's diameter—Modern triangulation operations—Parallels of latitude—Meridians of longitude —Projections of the sphere—Orthographic, Stereographic, Globular—Mercator's chart.	
2. Proper Movements of the Earth	32
Rotation on an imaginary axis—Revolution round the sun —Evidence of daily rotation—Evidence of annual revolu- tion—The ecliptic—Temperature—The zones.	
3. Distribution of Land and Sea	42
Area of land and water—Form of the land masses—Elevation of the land—Depth of the sea—Distribution of mountains and plains.	
4. Causes which Determine Climate	50
Decrease of temperature with elevation—Temperature of sea and land compared—Temperature of atmosphere—Ex- planation of land and sea breezes—Periodical winds— Monsoons—Trade winds—Oceanic circulation, caused by difference of temperature, and by density. Ocean currents—The Gulf stream, the Japan current, Mozambique current, Peruvian current, South Atlantic current, Aus- tralian current, Antarctic drift, East Greenland current.	

	PAGE
Evaporation—Periodical rains, distribution of moisture by the winds, influence of mountain ranges, deserts. Distribution of vegetable and animal life—Effects of climate on the distribution of man.	
5. Peoples of the World—Natural, religious, and Political Systems	66
Total population of the world. Races—Aryan family, Mongolian, Hamite, Semite, Negro, Bantu, Hottentot, Eskimo, Papuan or Negrito. Religions—Polytheism, Monotheism—Numbers of the followers of the chief religions. Growth of political organisation. Tribal divisions—Patriarchate, empire, kingdom, monarchy, despotism, oligarchy, democracy, republic, state, colony. Boundaries—Natural frontiers, artificial frontiers.	

EUROPE.

General Description, Extent, Relief, Hydrography, Climate, Products, Races, Education, Religion, Government	75
I. THE TEUTONIC STATES.	
1. THE BRITISH ISLES	87
2. SCANDINAVIA	102
3. DENMARK	108
FARÖE ISLANDS AND ICELAND	111
4. GERMAN EMPIRE	113
North Germany—Prussia	116
Saxony	117
Smaller States and Hanse Towns	118
South Germany—Bavaria	119
Württemberg	120
Baden	120
5. AUSTRIA AND HUNGARY	121
CIS-LEITHAN AUSTRIA	125
THE KINGDOM OF HUNGARY	128
6. SWITZERLAND	128
7. NETHERLANDS	132
LUXEMBURG	135
8. BELGIUM	135

CONTENTS.

ix

II. ROMANIC STATES.

PAGE

1. FRANCE	138
PYRENEAN or IBERIAN PENINSULA	144
2. SPAIN	148
3. PORTUGAL	151
4. ITALY	152
5. GREECE	159
6. ROMANIA	163

III. SLAVONIC STATES.

BALKAN PENINSULA	165
1. SERVIA	170
2. MONTENEGRO	170
3. BOSNIA and HERZEGOVINA	171
4. BULGARIA and EASTERN ROUMELIA	172
5. TURKEY PROPER	173
6. EUROPEAN RUSSIA	175

ASIA.

General Description, Lowlands, Highlands, Hydrography, Climate, Products, Peoples, Religion	181
--	-----

RUSSIAN ASIA—

THE CAUCASUS	197
SIBERIA	199
RUSSIAN CENTRAL ASIA	202

CHINESE ASIA—

CHINESE EMPIRE	203
CHINA PROPER	204
MANCHURIA	212
COREA	213
MONGOLIA	215
ZUNGARIA	217
EASTERN TURKISTAN	218
TIBET	219

	PAGE
JAPAN—	
JAPAN PROPER	222
YEZO	225
KURILE ISLANDS	226
LIU-KIU ISLANDS	226
JAPANESE COLONY in COREA—BONIN ISLANDS	226, 227
INDIAN ASIA—	
INDIA	227
CEYLON	240
LACCADIVE ISLANDS, MALDIVE ISLANDS	242
FARTHER INDIA—	
BRITISH BURMAH	243
BURMAH	244
SIAM	245
ANNAM	247
LOWER COCHIN CHINA	248
CAMBODIA	249
MALACCA	249
BRITISH STRAITS SETTLEMENTS	250
EAST INDIA ISLANDS	250
SUMATRA	252
JAVA	253
BORNEO	253
CELEBES	255
LESSER SUNDA ISLANDS	255
MOLUCCAS	256
PHILIPPINE ISLANDS	256
SULU ISLANDS	257
MOHAMMEDAN ASIA—	
BALUCHISTAN	257
AFGHANISTAN	258
AFGHAN TURKISTAN	261
INDEPENDENT TURKISTAN	262
PERSIA	264
ASIATIC TURKEY	267
ARABIA	275

AFRICA.

	PAGE
Contour, Relief, Rivers, Climate, Products, Peoples, Religion, Govern- ment	280
THE BARBARY STATES	288
MABOCCO	290
ALGERIA	291
TUNIS	292
TRIPOLI	293
SAHARA (The Desert)	294
EGYPTIAN DOMINION	297
ABYSSINIA	302
SUDAN	304
SENEGAMBIA	305
LIBERIA	306
GOLD COAST	306
INLAND COUNTRIES of the SUDAN (Futa-Jallon, Bambarra, Massina, Gando, Sokoto, Bornu, Baghirmi, Wadai)	308
LOWER GUINEA	309
PORTUGUESE WEST AFRICA	310
SOMALI and GALLAS	311
SULTANATE of ZANZIBAR	312
PORTUGUESE EAST AFRICA	314
SOUTH AFRICA—	
CAPE COLONY	316
KAPRARIA	319
NATAL	320
ORANGE FREE STATE	320
TRANSVAAL	321
GRIQUALAND WEST, or the Diamond Fields	323
The KAFIR KINGDOMS (Zululand, Gasa Country, Matebele, Barotse)	323
KALAHARA DESERT	324
NAMAQUA and DAMARA LAND	324
The ISLANDS ROUND AFRICA	325
Madagascar, Comoro, Mascarenhas, Socotra, Madeira, Canary, Cape Verd, St. Helena, Ascension.	

AMERICA.

	PAGE
General Description, Relief, Rivers and Lakes, Climate and Landscape,	
Plants and Animals, People, Religion and Education, Government .	328
GREENLAND	334
BRITISH NORTH AMERICA	336
CANADA PROPER	337
NEW BRUNSWICK	338
NOVA SCOTIA	339
PRINCE EDWARD ISLAND	339
NORTH-WEST TERRITORY	340
MANITOBA	341
BRITISH COLUMBIA	341
NEWFOUNDLAND	342
ALASKA	343
UNITED STATES	344
MEXICO	351
CENTRAL AMERICAN STATES (Guatemala, Honduras, San Salvador,	
Nicaragua, Costa Rica, British Honduras)	353
WEST INDIES	355
COLOMBIA	357
ECUADOR	358
VENEZUELA	359
GUAYANA (British, Dutch, French)	361
BRAZIL	362
PERU	364
BOLIVIA	365
CHILE	367
ARGENTINE REPUBLIC	368
PARAGUAY	370
URUGUAY	371
PATAGONIA and TIERRA DEL FUEGO	371
FALKLAND ISLANDS	372

AUSTRALASIA.

AUSTRALIA—	PAGE
General Description, Relief, Rivers and Salt Lakes, Climate and Landscape, Animals, Products, People	373
NEW SOUTH WALES	375
VICTORIA	377
QUEENSLAND	377
SOUTH AUSTRALIA	378
WEST AUSTRALIA	379
TASMANIA	380
NEW ZEALAND	381
POLYNESIA	383



LIST OF MAPS

DIAGRAM TO ILLUSTRATE THE SEASONS	<i>To face page</i> 39
CHART OF THE PREVAILING WINDS	" 54
CHART OF THE OCEAN CURRENTS	" 57
PHYSICAL MAPS.—EUROPE AND ASIA	" 75
" AFRICA	" 280
" NORTH AMERICA	" 328
" SOUTH AMERICA	" 328
" AUSTRALASIA	" 378

29

GEOGRAPHY:

PHYSICAL AND DESCRIPTIVE.

I. INTRODUCTORY CHAPTER.

DIRECTION AND DISTANCE.

1. THE first and most important question that Geography¹ has to answer is *where*? In order to answer this—to describe where any place or object is—it is necessary to understand what is meant by *direction* and *distance*.

If we go out into the open fields, the sky above appears like a vast dome that reaches down to the earth on all sides, forming a great circle in the centre of which we are standing. This circle, where earth and sky seem to meet, being the limit or boundary of what we can see, is called the horizon.²

Every morning the sun seems to rise near the same part of the horizon circle, and to climb slowly up into the arch of the sky during the day, descending again gradually till it disappears in the evening at a point opposite to that at which it was first seen.

If we watch this apparent movement of the sun across the sky from day to day, we shall soon notice that the sun appears in the same direction from us, or over the same house, or hill, or church, or wood, every day at noon, or when it is highest. The best way to convince ourselves of this will be to mark out on the ground, or on the floor of the room, the line of shadow thrown by any upright object—a post or a straight tree trunk, the corner of the house wall

¹ From Greek *gē* the earth, and *grapho* to write or describe.

² From Greek *orizō* to bound or limit.

or the side of the window—when the sun is highest, or when the shadow is shortest, and to watch the return of the shadow to this line at each midday.

2. That end of this midday or meridian¹ line that we have drawn, which points towards the sun at noon,² marks the direction called *south*; and the opposite end, towards which the shadow points at noon, shows the direction named the *north*.³ That side of the house, or other object, which faces the sun and is lighted up by it at noon, is thus called the *south side*; the opposite one, which is in shade at twelve o'clock in the day, is the *north side*. Notice some prominent object, a tree, or spire, or hill, that lies north or south from where you are.

3. The point on the horizon circle near which the sun rises in the morning, midway between north and south on that side, is named the *east*; the opposite direction, that near which the sun sets in the evening, is called the *west*; the side of the house which faces the morning sun is thus the *east side*; that which looks towards

the sun setting the *west side*. We may mark out these directions by drawing a line at right angles across our north and south line.

4. The four directions thus laid down—north, south, east, and west—are named the *cardinal points of the compass*, and give the foundation of all geographical descriptions.



Fig. 1.

Midway between these cardinal points, secondary direction points are drawn, and are named from those between which they lie—*north-east*, between north and east; *south-east*, between south and east; *south-west*, between south and west; and *north-west*, between north and



Fig. 2.

¹ From Lat. *meridies*, midday.

² In the northern hemisphere.

³ To mark the meridian line with greater accuracy, set up a straight stick on a level piece of ground. Three or four hours before noon measure the length of its shadow on the ground with a piece of string, and from the bottom of the post as a centre describe a circle with this distance as radius. Observe where the end of the shadow touches this circle again in the afternoon; then the line joining the middle point between these two on the circle, and the bottom of the post, gives the line of the meridian.

west, as in this diagram ; and these should be marked between the cardinal points you have drawn on the ground.

5. The spaces between these secondary points are further divided and subdivided. The direction midway between north and north-east takes the names of these two directions, and becomes *north-north-east*; between north and north-north-east comes the point called *north by east*, and between north-north-east and north-east that named *north-east by north*, and so on. There are thus eight recognised *points* in each quarter of the circle, or thirty-two points in all. One of the first duties that a young sailor has to learn is that of "boxing the compass," or telling off these thirty-two points in order thus:—

NORTH.
North by east.
North-north-east.
North-east by north.
North-east.
North-east by east.
East-north-east.
East by north.
EAST.
East by south.
East-south-east.
South-east by east.
South-east.
South-east by south.
South-south-east.
South by east.

SOUTH.
South by west.
South-south-west.
South-west by south.
South-west.
South-west by west.
West-south-west.
West by south.
WEST.
West by north.
West-north-west.
North-west by west.
North-west.
North-west by north.
North-north-west.
North by west.
NORTH.

And backward from north round by west to south and east.

6. As the whole circle is divided into 360 *degrees*,¹ each *quadrant* of the circle, or the arc between the cardinal points, between north and east for instance, comprises 90 degrees of the circle, and 90 degrees thus represents a right angle. Each degree is also subdivided into 60 *minutes*; and as there are eight minor spaces in each quadrant, the angle between two points is equal to $11\frac{1}{4}$ degrees or eleven degrees fifteen minutes; marked thus, $11^{\circ} 15'$.

7. The compass that we have been drawing upon the ground from observation of the sun's position at noon must not be confused with the instrument called the *mariner's compass*, which is a divided card borne upon a magnetised needle that points towards the magnetic pole of the earth. This magnetic pole does not correspond to the true north of the earth, and is ever gradually changing its position, so that the mariner's compass is subject to an error called

¹ In the division most commonly employed, called the sexagesimal scale.

the *variation*. To find out the amount of this variation in the instrument, it would be necessary to mark out a true compass from observation of the sun, as we have been doing. The mariner's compass is thus an untrue guide unless its error is exactly known and allowed for, but we shall have no occasion to use it, or, indeed, any instrument or appliance other than we can readily make for ourselves.

8. If you have been watching the return of the shadow of the post or corner-wall from which you first got the direction of south to the same position every day at noon, you will have begun to notice that the length of the shadow has been gradually changing from day to day or from week to week. If you began to observe it in winter or spring, it will have become perceptibly shorter as summer came on; or if in summer, longer and longer through autumn towards winter. In other words, the sun's path across the sky will seem to have risen to form a higher arch towards summer, and to have sunk gradually to a lower and flatter one as winter approached.

You will have observed also, in watching the sunrise and sunset, that the places where the sun first appears in the morning and sinks beneath the horizon-circle in the evening, do not correspond¹ with the east and west points of the compass that we have drawn on the ground, except towards the end of March and September. They are a considerable distance to the north of these points in summer, when the arch of the sun's path is highest and longest, and a corresponding distance to the south of them in winter, when its path is lowest and shortest. As the changes of the *seasons* of the year, the causes of which we shall afterwards have to understand, depend upon these changes in the height of the apparent path of the sun, it is very important to become acquainted with them for ourselves by actual observation.

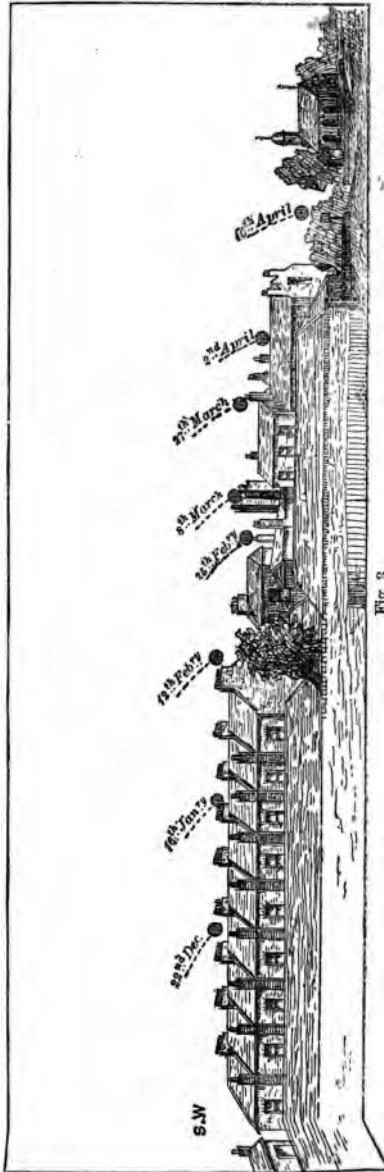
9. Perhaps the most convincing way to do this will be to make an outline sketch of that part of the horizon-circle which lies towards the sunrising or sunsetting, or both, from where you are living, and to mark upon this, each time that a clear sunrise or sunset is noticed, the position where the sun appears or disappears.

The accompanying sketch, upon which the positions of the sun at setting, from winter on towards summer, have been marked at various dates, will show what is meant.

10. If we go out and observe the heavens from night to night, we shall soon notice that though the different groups of stars (or

¹ Here in the British Isles. To an inhabitant of London the sun rises and sets due west and east on the 20th of March and again on the 23d of September, when day and night are of equal length.

constellations as they are called) exhibit always the same form and appearance, they change position from hour to hour, moving across the sky just as the sun does, but with this difference, that some of them are visible at all hours of every clear night, or do not set beneath the horizon, while others rise and set like the sun. If, for example, we watch the well-known group of stars commonly called from its shape the "Plough" or "Charles's wain" or "waggon," which the Romans called "Septem Triones," the seven ploughing oxen, we may see it in such a position as that marked (a) in the diagram on the following page; and if we look again some hours later it will have moved round to some position such as (b) or (c), or an intermediate one.¹ This constellation never sets beneath the horizon here in Britain, but, in the south of England, you will notice it just touching on the northern horizon, when it is at the lowest part of the circle through which it seems to pass in the sky. Others, such as the three bright stars of "Orion's belt," or the cluster of the "Pleiades," if you watch them, rise in the east and set on the western horizon like the sun,



¹ The celestial "waggon" thus goes backward.

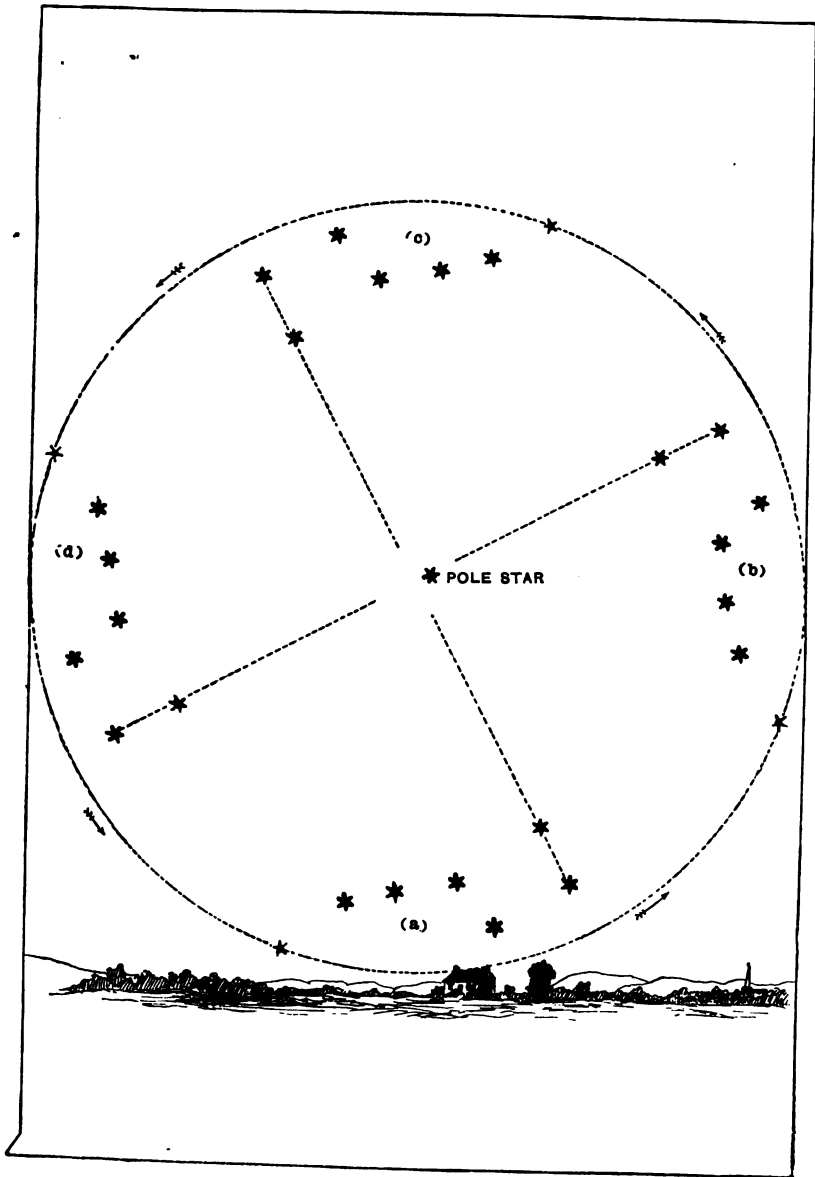


Fig. 4.

but the height of the arch they form in passing across the sky, unlike that of the sun, remains always the same.

11. Nearly at the centre of the circle which the Plough and the other stars seem to form in their course in the northern sky, is a star which remains always close to the same position, or immediately beside the centre or pole round which all the other stars seem to revolve. This is hence called the *Pole Star*, or the "North Star." Two of the brightest of the stars of the "Plough" or the "Wain"—the two which form the back of the imagined waggon or the face of the plough—are very nearly in line with this central star, and are called the *pointers*, because they point to it. If an imaginary line be drawn through these two stars, and produced onward till the extended part is nearly five times the length of the apparent distance between the pointers, as in the diagram, its extremity will fall close to the Pole star. There is no other star equally bright in its vicinity, so that it cannot readily be mistaken.

12. Being thus able to find the position of the Pole star, we are in possession of another means of determining the cardinal points of the compass at any place.¹ If overnight, out in the field or the garden, we set up two sticks so that a line joining them points in the direction of the Pole star, we shall find that they also point by day, in the opposite direction, to the sun at noon, or that they stand in the meridian line, north and south.

13. If, besides the *direction* of one point from another, we know the distance between the two, it becomes possible to define their relative position, and to represent this accurately on paper on a reduced scale. The most convenient measure of distance that we have is that of the pace² in walking, the distance between the heel of one foot and that of the other. In the army and among disciplined men the pace becomes of constant length, and is $2\frac{1}{2}$ feet (30 inches) for ordinary marching, or about 2100 paces go to an English statute mile of 1760 yards. (Find out for yourself what is the average length of your pace in ordinary walking.)

14. Suppose now, for example, that there is a flagstaff in front of the doorway, and that the shadow of the post points directly to the door at noon, and that we find the distance from door to flagstaff to be 20 paces, we can say then that the staff is 20 paces *south* of the doorway, and the relative positions of the two objects are at once defined. In representing these relative positions on paper it is usual to assume that the top side of the paper is the northern, the bottom the southern, as the compass has been drawn (p. 4), the

¹ In the northern hemisphere.

² *Lat. passus*. The Roman pace, however, was the interval between one heel-mark and the next mark of the *same* heel, and was equivalent to 4·8 English feet.

right being the eastern and the left the western side. Then, taking any convenient distance to represent 20 paces, say 20 tenths of an inch, the places of the staff and the doorway would be laid down as in Fig. 5.



Fig. 5.

Or suppose that, from the place where we have drawn the compass on the ground, a tree, the corner of a wall, or any noticeable object, lies in the direction midway between the north and east points, and that it requires 15 paces to reach it, we would say that it stood 15 paces *north-east*, and its relative position would be represented on paper, to the same scale we used before, as in Fig. 6.

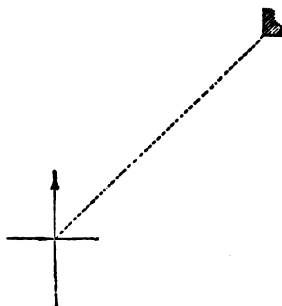


Fig. 6.

15. The reduced scale referred to above is a

smaller distance chosen at will to represent the true or natural distance in *plotting* or laying down a representation of the relative position of two objects on paper. The true scale in the first of the above examples is one of paces, but to represent even a small number of these truly on paper would require an enormous sheet, and accordingly we have chosen a reduced scale, making one-tenth of an inch represent a pace. This reduced scale is said to be one three-hundredth ($\frac{1}{300}$) of the natural scale; or any distance represented by it on paper must be multiplied by 300 to give the true length it represents, for we have found the pace to be 30 inches long, and have taken $\frac{1}{30}$ of an inch to represent a pace.

MAPPING.

16. We can now find roughly the direction and distance of any object, hence we are in a position to begin to make a ground-plan or map, which is just a representation in miniature of a part of the earth's surface.¹ We can find, for instance, from the points of the compass that we have drawn, or by making another, what are the directions of the walls of the room or of the fences of the garden or field, and by pacing along these we can get a sufficiently accurate measurement of their length.

¹ The African explorer Schweinfurth, after his instruments had been lost in the burning of his hut, made a survey of a large district of the Upper Nile by counting his paces and observing by the sun the direction of his marches.

Suppose, for example, that in the schoolroom the line of shadow thrown by the upright sash of the window at noon falls across the floor in the direction from the left corner of the window side of the room to the opposite corner, and we find on pacing it that the room is 10 paces square. We can tell then that its walls lie parallel to or in the same direction as the secondary points of the compass; that one with the window in it and the back wall run from north-west to south-east, and the two side walls from north-east to south-west. The *plan* of the room, drawn to the scale that we have used before, would then be as we have shown here, the dotted line representing the direction of the line of shadow at noon, and the stronger lines the walls.

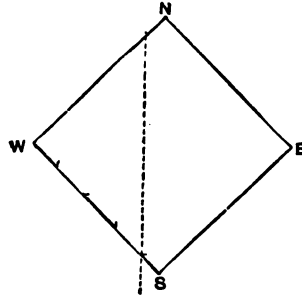


Fig. 7

17. Or we may go out into the garden or the field, and make a plan of its outline in the same way. Suppose that, after marking out the compass in the middle of the field by means of the shadow at noon, or by the Pole star at night, we find that the fence which

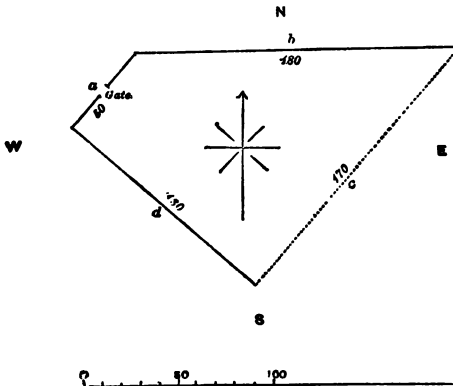


Fig. 8.

contains the entrance gate measures 50 paces, and that it lies in the direction north-east to south-west, we may draw it on paper, using a scale of an inch to represent 100 paces,¹ as shown by the line (a) Fig. 8. Next, pacing along the north wall, we find it to be 180 paces long, and that it lies as

nearly as possible east and west; its plan is then shown by the line (b). The third

¹ A larger scale should be used in practice. This reduced scale would be represented by the fraction $\frac{1}{3000}$, for in this case the hundredth part of an inch represents a pace of 20 inches long.

or south-east hedge proves, let us suppose, to have the same direction as the fence which has the gate in it, and is 170 paces long ; its plan will be the line (c) ; the fourth side lies south-east to north-west, and measures 130 paces, and is thus shown by the line (d) on the sketch.

18. Here then we have made a plan or map of the field, and have drawn it in its true geographical directions. The whole number of paces round its sides is 530, or about a quarter of a mile, on the supposition that each pace represents about $2\frac{1}{2}$ feet. If now you note carefully what time it takes you to walk round its boundaries, you will gain another means of estimating any longer distance ; that is, by observing the *time* required to walk a quarter of a mile, or better, a whole mile, or four times round the field.

19. Knowing how to find for yourself the cardinal points of the compass on any clear day or night, and being in possession of two measures of distance (your pace, and the time it takes you to walk a mile), you are now in a position to begin to learn the geography of your own neighbourhood. What directions do the roads take from your house, and what villages or towns do you come to in following them ? What streams or rivers are there near you, in what directions do they flow, and where do they go to ? What lakes or canals ? What kind of country is it ? Are there any hills or mountains ? Is it wooded, or grassy, or under corn ? Are there any historical monuments in your neighbourhood, and what events do they recall ?

20. For example, let us take the neighbourhood of Battle in Sussex, where, on the 14th of October 1066, the Normans under William the Conqueror finally overthrew the Saxon dynasty in England, and where William, to commemorate his victory, founded a splendid abbey, the high altar of which was fixed on the spot where the standard of Harold fell.

From the grammar school above the town, beside the cross-roads, or better, from the height called Caldbec¹ Hill immediately behind it, where the windmill stands, and where the Watch Oak² stood, we have a fine view of all the country round, and away south over the undulating ridges and hollows, fields, meadows, and woods to the south, towards Eastbourne and the heights which run out to the white chalk cliffs of Beachy Head, enclosing Pevensey Bay, where the Normans landed and burnt their ships to prevent retreat. Watching the sun at noon from this height, it is seen nearly over Catsfield windmill, which stands prominently on one of the nearer

¹ Popularly " Callback Hill." a corruption of Caldbec, or Cold Brook, the name of a stream which flows from its slope.

² The name Watch Oak is probably derived from the times when beacons were erected upon eminences commanding views of the coast, in order to raise the country in case of invasion. — *Walcott*.

ridges between us and the sea. The south line then runs from Caldbec Hill a little to the left of Catsfield Mill, or, in technical language, the *bearing* of the mill from where we stand is south by west. Having fixed this main cardinal point, and having marked the compass out on the ground, we find that Black Horse Mill, which rises high and clear near the top of the ridge beyond the town and the abbey, is almost exactly in the direction of the south-east point. Here then we have three prominent objects, the directions of which from one another we know, to serve as a basis for our map. Before leaving the hill we may notice that the main street of the town descending the ridge into the valley, and the road towards Hastings continuing it up the opposite ascent, have nearly the same general direction as the line joining this point with Black Horse Mill, or that they run from north-west to south-east. This may serve for one day's work.

21. Another day, starting from the cross roads immediately under Caldbec Hill, we know that the south line runs close by Catsfield Mill, which we can see from this, and we can thus mark out a compass at once. Facing round with our backs to the south, we now note that the London road runs straight away in the opposite direction, and if we follow it a short way over the ridge we find it descending into the valley beyond, and climbing a farther ridge beyond, always in the same due north line.

Coming back to the cross roads it may be next observed that the Lewes road past the Drill Hall and on towards the "Union," runs along the top of the ridge neither due west nor south-west, but between these two directions, or west-south-west; and that the road down into the main street of Battle follows exactly the direction of the south-east point. On coming home we may begin our map by marking down these roads in their proper directions, as in Fig. 9.

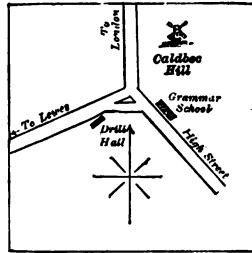


Fig. 9.

22. On another occasion, coming back to the cross roads, the measurement of the high road through Battle may be made. Starting with our backs to the finger-post pointing to the London and Lewes roads, and walking down the High Street, we note that 500 paces bring us to where Mount Street runs off to the left; from that, 350 paces more down through the main street, past the "George" in the same south-east direction, bring us to the open space called the Bull Ring, opposite the great towered gateway of the abbey. From

this point the road bends a little more to the east between the high wall of the abbey enclosure and St. Mary's churchyard, for a distance also of 350 paces; then it turns a little more to the right, or to the south-south-east, for 310 paces, down the hill to the toll-gate, where the road to the powder-mills runs off to the right; 200 paces more, south-east again, passing the road on the left which leads to the railway station, bring us to the bridge over the railway; and for 400 paces more we ascend the ridge in the same direction. Next there is a bend more to the east for 250 paces, then an east-south-east stretch of 750 paces up the hill, and 300 paces more, south-east again, bring us opposite the Black Horse Mill on the left of the road. From this height we can look back to Caldbec Hill and the ridge on which the town stands, down which we have come, remarking also the steep descent on each side of where we are now standing, down through Bodehurst¹ wood to the valley in which Sedlescomb lies on the right, and to the hollow between us and

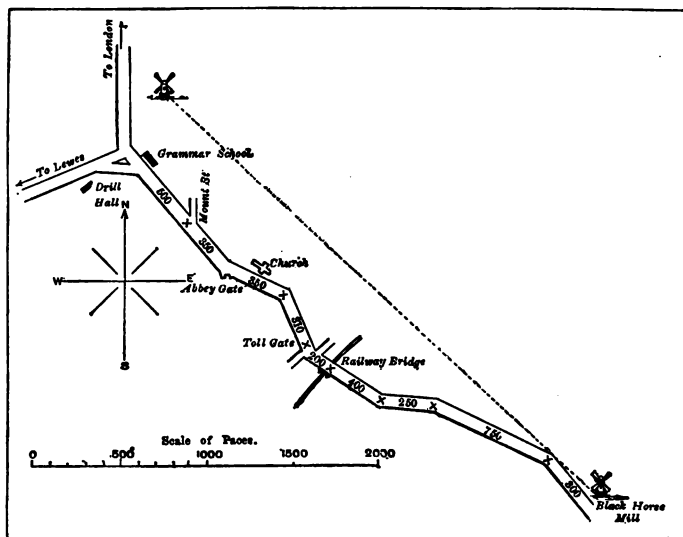


Fig. 10.

Telham² Hill on the left. We may also note that from this point Catsfield Mill is to our left, and that a line pointing towards it forms a right angle with the direction of Caldbec Hill. Catsfield

¹ Popularly Bathurst; Bodehurst = "the house in the thicker part of the wood."

² Tell = a round hill, and ham = a home.

Mill thus bears south-west from Black Horse Mill. This bearing, with that from the cross roads, will enable us to fix its position. Having noted down all the changes of direction, and the distances from point to point along the road (reckoned in paces), it will not be difficult to make a map of the road on paper at home, as shown (Fig. 10). Here, for convenience, a scale of about 1000 paces to an inch ($\frac{1}{32000}$) has been adopted, but a much larger scale should be used in practice.

23. We have now made sure of the central line of our map, and it will be easy to extend it in any direction. Suppose we next follow the side road which we noticed branching off from the turn-pike gate, nearly at right angles to the main highway, or south-west from it (see Fig. 11). We find that it goes straight in this direction for about 1600 paces along the slope of the Abbey Park, which rises up to the old dormitory buildings on the right, and we note the little stream which runs (also to south-west) nearly parallel with it in the hollow on the left. At the end of the long straight piece the road turns to the left or south for another 400 paces, to where it crosses the road which runs east and west up Telham Hill on the left, and up Camp Hill, through the hop-field on its steep slope, on the right towards Ninfield. At these cross roads we may notice that Caldbee Hill and the Catsfield windmill stand in almost exactly opposite directions from one another, and we know already that these two points are nearly north and south of one another, so that these cross roads are very nearly due south of Caldbee Hill or of the cross roads on the ridge near the Grammar School. This will test the accuracy of our measurements when we come to mark the road on our map; as it is a smaller road than the main highway, it should be shown by a narrower double line.

24. Another day we may add the pathway which leaves the main road at the wicket beside the Abbey gateway, leading south-west, south-south-west, and then south-south-east, round the height of the Abbey Park, to join the road to the powder-mills. In this walk the stream in the deep hollow on the right, formed between the height of the Abbey Park and the high ridge along the top of which the Lewes road extends, will be noticed, as well as the lake which receives it at the base of Camp Hill. We may afterwards go along the powder-mills road to mark the place where the stream from this lake, passing beneath the bridge on the Ninfield road, joins the other little south-west flowing stream that we formerly noted running alongside the road from the turnpike. This is called in geographical language the *confluence* of the streams. Their *right* and *left* banks are those which rise on the right hand and on the left as we look in the direction in which the stream is flowing.

After the confluence the united streams form another lake, and thence, by the old powder-mills (now made into hop-kilns) on the left bank, run away south and south-east.

25. For another walk we may take the east road up Telham Hill, and add this to our map. On the way up the slope, at about 1000 paces from the cross roads, we come to the bridge over the very deep cutting which has been made to let the railway pass, and notice that the line at this point lies nearly north and south, or at right angles to the road. Knowing the position of this bridge, we shall be able to draw on our map the line of railway between it and the bridge on the main highway, using a sign that will distinguish the railway from an ordinary road. As we climb higher up the ridge we have a distinct view across the hollow which separates us from the opposite height on which the Abbey stands, and of the ridges on each side of it. From this point also we can form the best idea of the battle-field. It was on the rounded slope now crowned by the Abbey, and on the ridge beneath Caldbec Hill, that Harold's Saxon Camp was pitched, guarding the only road to London.¹ On reaching the end of the road up Telham Hill we find ourselves on the main road to Hastings, and returning by this way towards Battle we may note that the Telham Hill or Ninfield road branches off just 900 paces above, or south-east of, the Black Horse Mill.

26. Another day we may add Mount² Street to the map, noting how it runs north along the side of the ridge, and then bends north-east away to Whatlington. Going up again from this to the wind-mill on Caldbec Hill, let us look this time more particularly at the

¹ The Normans (about 80,000 men) coming up from the coast at Pevensey, are believed to have first unfurled their flag at Standard Hill, near Ninfield, a few miles to the south-west of us, and to have marched thence, perhaps along the very line of the road on which we are standing, to take up their positions here on Camp Hill and along the slope of Telham Hill, or Hechelande, opposite the Saxon camp. Their ships had been burned behind them, so "that their only hope might lie in their courage and resolution, their only safety in victory." . . . "When the Normans had given the signal of battle the first encounter began with a flight of arrows from both armies for some time; then, setting foot to foot, they fought man to man, and maintained the battle a long while. But when the English, with admirable courage and bravery, had received their fiercest onset, the Norman horse furiously charged them with full career. When neither of these could break the army, they (the Normans), as they had before agreed, retreated, but kept their ranks in good order. The English, thinking they fled, broke their ranks, and without keeping any order, pressed hard upon the enemy; but they, rallying their forces, charged afresh on every side with the thickest of them, and, encompassing them round, repulsed them with a mighty slaughter. Yet the English, having gotten the higher ground, stood out for a long time, till Harold himself was shot through with an arrow, and fell down dead. Then they presently turned their backs and betook themselves every man to flight."

"The Norman, proud and haughty with this victory, in memory of the battle erected an abbey . . . in that place where Harold, after many wounds, died amongst the thickest of his enemies, that it might be, as it were, the eternal monument of the Norman victory. About this abbey there grew up afterwards a town of the same name."—(Camden's *Britannia*.)

² Originally Montjoye, probably a memorial of the spot whither William rode in triumph at the conclusion of the battle, and of a mound of stones raised to commemorate it.—*Walcott*.

relief or rise and fall of the ground with which we have now become familiar. Evidently this, and the top of the ridge along which the Hastings road passes beyond the Black Horse Mill, are the highest parts of the ground. Between these heights, the ridge on which the town stands runs down to meet that up which the Hastings road ascends beyond the railway. To right and left of the town ridge are deep rounded hollows. That on the right we have already remarked from the Lewes road, and from the pathway round the Abbey Park; the other descends immediately from Mount Street, and if we go down to the churchyard we can have a full view of it from behind the church. From this hollow the stream named the Caldbec runs away to the north-east, and we know that the stream passing the powder-mills flows south from the opposite hollow. The main street of Battle thus forms the *water-parting* of the streams of the district. When rain falls over it the rills which run down on one side of the highway go to join the powder-mills stream, and if we followed this down we should find it reaching the sea close to St. Leonard's. The rain which falls on the opposite side of the street is drained off into the hollow from which the Caldbec flows to join other streamlets in forming the river that reaches the Channel near Winchelsea.

27. Having gained a clear idea of the form of the ground in repeated walks, we may now begin to mark out the relief of the district on our map, using what are termed *hachures*, or short lines placed in the direction of the slope, and made stronger and placed closer together where the slope is steeper and higher, as shown in the sketch. This done, the map may be completed by marking in the blocks of houses along the roads, and by writing the names of the more prominent objects opposite to each.

28. If we wished to represent the rise and fall of the ground along any particular line in a more distinct way than can be done by mapping, we should have recourse to what is called a *section* on that line. Take the line of road between the Grammar School and Black Horse Mill for example. We have noticed in going over it that the road descends evenly down the High Street to the space in front of the Abbey gate, that from the Bull Ring on past St. Mary's Church it is nearly level, and that it descends from there more rapidly to the toll-gate. Here again there is a more level piece, after which the road begins to ascend again over the railway bridge, and up the undulating ridge towards the Black Horse Mill. Looking back from this point, it is evident that we are upon higher ground than that on which the Grammar School stands. Without careful measurements by means of an instrument called a *level* or levelling telescope, we cannot find out very accurately the differences

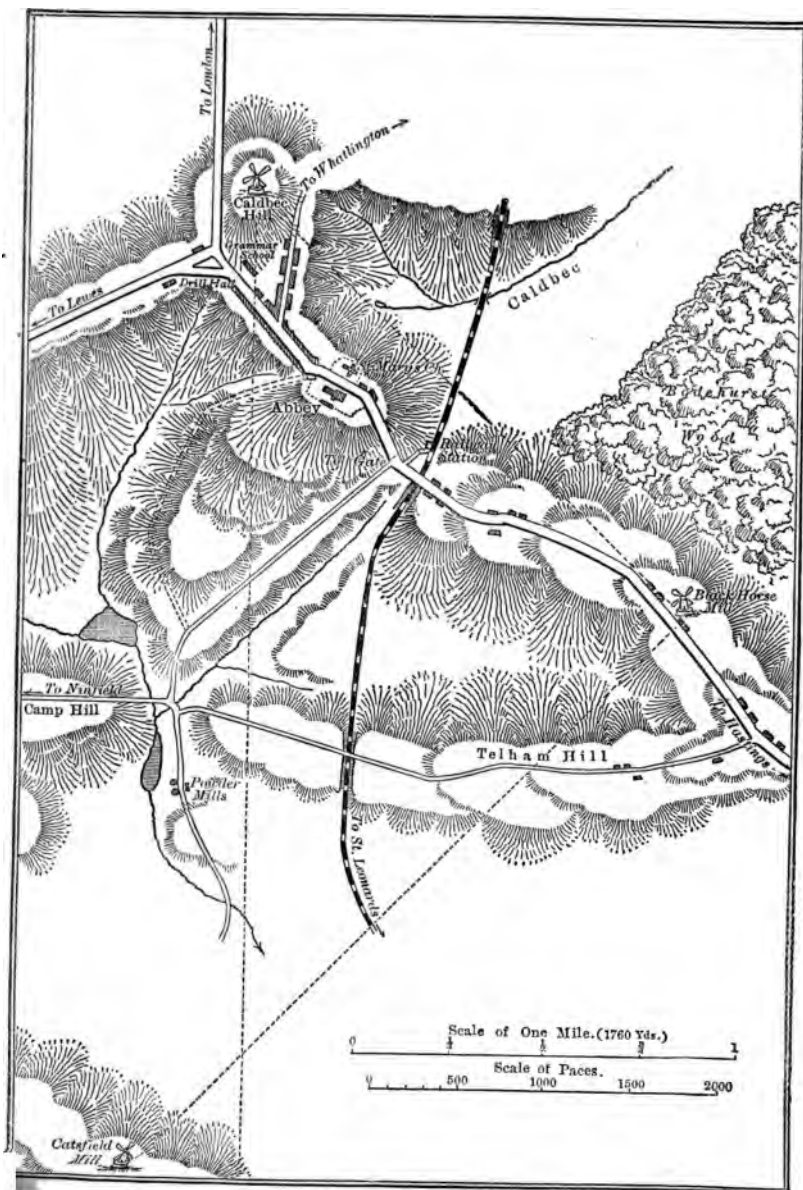


fig. 11.

of height of each point along the road ; but we can get a very good general idea of the form of the ground without this. The part of the road before the railway bridge was reached was evidently the *lowest* ground that we passed over, for the road ascended on each side of it, and we may assume that the cross roads near the Grammar School are about 150 feet, and the road at the Black Horse Mill about 200 feet above this point. To represent a section of the road between these points, then, we may draw a horizontal line of the same length as their distance on our map (3400 paces of the scale), and suppose this line to represent the lowest level, or the level of the road at the toll-gate (upper section, Fig. 12). The left and right ends of this line will then represent the horizontal distance between the cross roads and the base of Black Horse Mill ; and distances along it of 850, 350, 310, and 200 paces, measured from the left end, will show the horizontal distances¹ of the Bull Ring, the level past the church, the toll-gate, and the railway bridge. We then measure off a distance of 150 feet (or 60 paces of the scale), and mark this distance upward vertically from the left end of the line we have drawn, to represent the level of the cross roads. Next a distance of 200 feet (or 80 paces of the scale), marked up from the right end of the line, will show the height of the road at the Black Horse Mill above the lowest part. Between these highest levels and the lowest midway we can now draw an evenly-sloping line to above that point on the horizontal line which indicates the distance of the Bull Ring, to represent the uniform descent of the High Street ; then a level part to show the flat road past St. Mary's church ; and then a slope again down to touch the horizontal line at the lowest level near the railway ; and from that an undulating line sloping upward to represent the rise of the Hastings road to the Black Horse Mill, as shown below. Here then we have an imaginary view of the profile

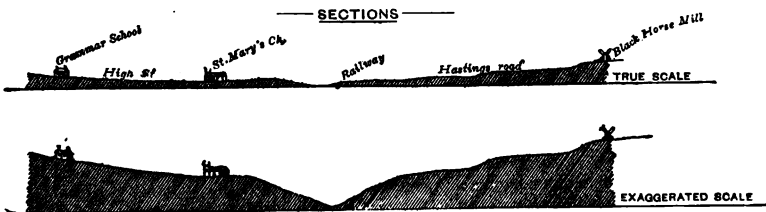


Fig. 12.

of the road as it would appear if we had cut down the ground all

¹ The horizontal distances are strictly somewhat less than those measured along the sloping ground ; but for our present purpose this difference may be disregarded.

along it on one side to the level of the lowest part of it. This is called a *section to a true scale*, for we have used the same scale in representing the horizontal and the vertical heights. In most cases where sections are drawn, however, a larger scale is used to represent the vertical heights than is employed to show the horizontal distance, for by so doing each smaller rise and fall of the ground is brought out more distinctly. The lower section, Fig. 12, in which the vertical distances have been exaggerated four times, the horizontal scale remaining the same, will make this evident. It is important to bear this in mind in looking at any section that one may meet with in books or maps, and to inquire first of all what relation the vertical scale bears to the horizontal one: if these are the same, we have a true profile; if they are different, then this difference must be clearly understood to prevent erroneous impressions.

29. For practice in mapping, the following examples may be worked out on the slate or on paper, using a scale of about four inches to represent 1000 paces; but the practical mapping of a part of your own neighbourhood, in the manner above shown, should in no case be neglected.

1. At a point which we shall call (*a*) on a road which runs due east and west, or at right angles to the direction of the sun at noon, a church spire is noticed bearing due north from us, and a hill top south-east. Walking eastward along the road for 1000 paces, it is noticed that the church spire now bears north-west, and going on another 500 paces, the direction of the hill is at right angles to the road, or due south. What are the distances of the church and of the hill from the point (*a*)?

2. Draw a rough map from the following notes :—¹

Ship anchored opposite a small bay. Rowed on shore to west point of bay, and ascended knoll at end of low line of hills which extends along the coast towards north-west. Call the knoll (*a*). From it ship distant 6000 yards bearing south-east. The opposite headland of bay (call it *e*) bears exactly east. From knoll look to north and east across a valley with small stream, and hills beyond, on which note two peaks; one (call it *c*) bears due north, other (call it *d*) bears north-north-east. Head of bay bears north-east. Walked along hills from (*a*), moving north-west, and at 3000 yards observed peak (*d*) bearing north-east. On the left the coast was distant 1000 yards. Went on in same direction (north-west), 3000 yards more, and came to point (*b*) on the line of hills extending from (*a*); (*b*) is top of cliff rising abruptly from sea. Beyond it coast-line goes off, bearing west-north-west. At (*b*) observed bearing to peak (*c*) north-east. From (*b*) turned to right, and walked due east 4250 yards, when I found myself with knoll (*a*) bearing due south, and peak (*c*) due north. Going on 1000 yards more, crossed the stream, which came down from the north-west, and flowed off into the sea on the bearing of the ship, which we saw about five miles off (8800 yards). Going on in the same direction 2000 yards more, peak (*d*) was seen to bear due north. Another

¹ From one of the examination papers for the prize medal of the Royal Geographical Society.

1250 yards brought us to head of bay; the ship now bearing nearly due south, and the east headland of the bay (*e*) bearing south-east. The whole distance from (*b*) to the head of the bay had been 8500 yards. The bay from this point curved slightly round on either side to the headlands (*a*) and (*e*). This line of hills on which were peaks (*c*) and (*d*) ran round and ended in the headland (*e*).

3. Draw a section of the ground from the following data, to a true and an exaggerated vertical scale:—

Leaving the house, walked up a path which leads up by a steep slope to the top of a hill; descended the opposite undulating slope to a bridge over a stream in the bottom of a wide valley; ascended an opposite gentle and uniform slope to the top of a vertical cliff overlooking the sea. The horizontal distance from the house to the top of the hill was 750 paces, from the hill-top to the bridge 1400 paces, and from the bridge to the top of the cliff 1800 paces. The house is 200 feet, the hill 480, the bridge over stream 50, and the cliff 250 feet above the sea-level.

II. PHYSICAL GEOGRAPHY.¹

I. FORM AND DIMENSIONS OF THE EARTH.

That branch of Physical Geography which treats of the form and dimensions of the earth, and of its relations to the other bodies constituting our universe, is frequently designated as Astronomical Geography.

The earliest speculators as to the nature of the earth seem to have regarded the world as a great plain, the centre of which was occupied by the land to which they themselves belonged, all

¹ Geography is usually divided into "Physical" and "Descriptive," of which the former deals with the great natural features of the earth, its position as a member of the solar system, and the distribution of life over its surface; whilst Descriptive Geography considers our planet as divided into states and countries. Comparative Geography may be either physical or historical: The former inquires into the changes which have taken place in the physical features of the earth's surface, and thus trenches upon geology; whilst the latter confines itself to a consideration of the geographical nomenclature and the political boundaries, such as existed at various epochs, and is thus, in truth, merely a handmaiden of history. Ritter, however, and his school, apply "comparative" to that treatment of geography in which the earth is looked upon as the stage of human activity, and the influence which geographical features have exercised and still exercise upon the fortunes and destinies of nations are traced and illustrated.

outside this, to the edge of the plain, being filled up by the imagined lands of mythical peoples. This is illustrated in the view of the world accepted by the Greeks of Homer's time, which represents the land round central Greece, and on each side of the sea, passing into the territories of the Cimmerians and the borders of night on the north, to the borders of day and the land of the Pygmies on the south, and to the Elysian fields, the paradise of terrestrial heroes, in the far west—all being girt about by the ocean, from which the sun rose and into which it was believed to set.

2. But already two hundred and fifty years before the Christian era, when the Romans were beginning their aggressive wars against opulent Carthage, the philosophers of the schools of Alexandria seem to have abandoned these dreamy ideas and to have gained from theoretical considerations a remarkably clear conception of what we now know practically to be the true figure of the earth. Ptolemy in his Geography gives a calculation of the size of the sphere of the earth, and from his time onward it seems to have been universally accepted by men of learning that our world was a globe. It was this belief that led Columbus to seek a shorter route to the Indies by sailing due west from Spain ; but his supposition that on reaching Hispaniola and Cuba he had really come to the eastern shores of Asia near Japan, shows how very erroneous were the ideas of the extent of the world in his day.

3. It was not however till after Magellan had first crossed the Pacific, and that one of his ships which had sailed out westward from San Lucar was brought back to the same port from the east, that there existed any proof of the sphericity of the earth which could be convincing to the popular mind, or that any true conception of the extent of its lands and seas was obtained, for before that time no one had any idea of the vast width of the Pacific. We can readily understand why the earliest notion of the form of the earth should have been that of a flat disc floating in or surrounded by water, since it is difficult, if not impossible, to become convinced by practical observation that the earth is round without moving from one spot on its surface. The irregularities of the surface of the land, trees, hills, and valleys, generally give a broken horizon, and the first idea suggested by looking at any small space of water is that of the apparent levelness of its surface.

4. As soon, however, as men began to extend their journeys and voyages in all directions, a number of appearances must have been observed which could only be explained on the supposition that the surface of the earth was curved and not flat. Watching the departure of a vessel from harbour, as she sailed out to sea, it could not fail to be noticed that the hull was the first part to disappear, sinking as it were

beneath the sea, that the lower masts and sails were next hidden, till the top masts alone remained, before the ship was finally lost sight of; or if scanning the sea horizon for the return of a cargo-ship, the same appearances were noted, but in exactly reverse order, as the vessel drew towards the port. Such appearances could not be explained on the supposition that the earth and the sea over it was a flat plain; but the explanation becomes clear at once, if it be admitted that the surface is curved, the rise of the curve being that which conceals from view the lower part of the distant ship.

5. If, instead of watching the ship's arrival or departure from the land, one were sailing away from or towards shore in the ship itself, the appearances of the vanishing or rising land would be precisely similar. The low grounds of the shore are the first to be lost in leaving, the last to be seen in approaching. On nearing the low coasts of Holland, for example, the first objects noted are probably

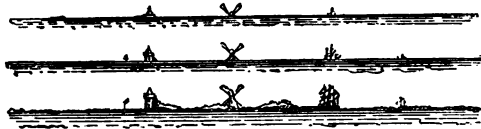


Fig. 13.

the top of a church steeple or the upper half of a windmill which seems to be spinning in the sea itself; and it is not till much later that the low dyke or bank which keeps out the sea from the land at the same level, comes into view. This is one of the most familiar and yet most convincing proofs of the curvature of the earth's surface, and one that can readily be tested at any part of the sea coast; and as we now know that precisely the same appearances are presented in every part of the world that has been visited, and that the amount of the curving is practically the same in all, the only conclusion that can be arrived at is that the earth is a sphere.

6. On land the visible horizon is, as we have said, in most parts broken by the irregularities of the surface, but wherever there is a plain wide enough to allow an unrestricted view in all directions, the limit of vision of the observer standing on it is formed by a circle where sky and land seem to meet at a uniform distance from him on all sides. At sea this definite circular limit of the horizon becomes more distinct; move in what direction one may, the limit of the circle is never reached; new objects may rise on the limit towards which the ship is sailing, or towards which you may walk on the plain, while others formerly within sight sink on the backward horizon, but the vessel or the individual always seems to

form the central point of this horizon-circle. This is observed all over the world, to whatever part one may go, and the same height above the sea level or above the plain gives practically the same extent of horizon in any part of the earth. Now there is no other shape than that of a sphere which would seem circular in every point of view.

7. It may also be taken as a proof of the earth's roundness that as one climbs a height the circle of vision expands; for as we ascend we are enabled to look over a part of the curve which has limited our vision below. Observations show that an equivalent expansion of horizon is obtained by an equal increase of elevation in all parts of the world. The conclusion again is that the earth is a sphere.

8. In early days of navigation the sailors of the eastern Mediterranean were wont to steer by the constellation *Arktos*, the Bear,¹ and later by the smaller group of stars to which the name Lesser Bear was given, the brightest of which we now call the *Pole-star*. Sailing north and south between Greece and Egypt, they could not fail to notice how their change of position affected the altitude of these stars; how as they sailed southward the Little Bear seemed to sink down towards the earth, and to rise again in the heavens as they steered northward; and the sailors of our day voyaging in wider seas find the Pole-star rising over their heads to near the zenith as they sail towards the Arctic ice; as they go south through the Atlantic the Pole-star sinks down and down towards the horizon, till at length it touches it and disappears beneath, while new constellations, among them the Southern Cross, rise in the heavens to the southward. On the homeward voyage from the south the Pole-star again appears on the horizon, and again seems to mount the sky, till at the port where the ship started it is found to have the same altitude as when it was last seen there, and to the people who have stayed at home it has not changed its position at all. Evidently, then, the apparent movement of the stars is due to the real change of position of the voyager along the surface of the sea.

9. This only shows, however, that the surface of the earth is curved in a north and south direction. If the voyage were made in a due east and west direction, the Pole-star would maintain the same altitude throughout; but the apparent movement of the sun and stars gives evidence of curving in this direction also. If the earth were level from west to east, the sun would rise at the same moment to all places along this line. But a voyager starting, say, for instance, with his chronometer set to Greenwich time, finds

¹ Part of which we already know as the Plough or the Wain. (p. 7).

that as he sails west the sun and stars rise and set later than at Greenwich; till when he reached the West Indies he would find his chronometer six hours in advance of the time of the place, which is called local time. If he had steered east to India he would have observed the sun and stars rising and setting earlier as he proceeded, till on arriving there his clock would be six hours behind the apparent time in India. Reaching London again, his clock agrees with local time as before. This change in the times of sun and star rising could only take place if the earth were curved in an east and west direction also. The observation that the shadow cast by the earth in eclipses of the moon is always circular, was made as long ago as the time of Aristotle, and affords another strong proof of the globular form of the earth.

10. Coming now to the question of the actual size of the earth, it has already been noted that the philosophers of the schools of Alexandria made a wonderfully close approximation to the true solution of this problem, though at the time they lived not a hundredth part of the earth's surface was known from actual discovery. One of these philosophers, named Eratosthenes, watching the apparent annual movement of the sun across the sky, had observed that at midsummer, or the longest day, its rays illuminated the bottom of a deep well at Syene (Assuan), on the Nile. By observing the slope of the sun's shadow at Alexandria at the same time, he found that there the sun was a fiftieth part of the circumference of a circle ($7^{\circ} 12'$) from the zenith, or the point directly overhead in the heavens. Reasoning that if the earth is a sphere and its centre the middle point of the visible celestial vault, any change which makes an alteration in the zenith-distance of a celestial object such as the sun or a star must correspond to a like distance on the earth's surface, he concluded that the distance between Syene and Alexandria, which he found to be about 5000 stadia, must be a fiftieth part of the earth's circumference, which he accordingly set down as 250,000 stadia, a calculation which is in error only by about a seventh from what we now know to be the true circuit of the earth.

11. Thus to Eratosthenes belongs the credit of having first applied a true principle for the solution of the problem of measuring the earth, the principle upon which more accurate measurements are being extended at the present day. At intervals from the time of Eratosthenes, measurements on the plan that he had adopted were made both in eastern and western Europe, but it was not till after the invention of the telescope in the seventeenth century had given new and wonderful powers of observation of the heavens, and aid to the labour of the surveyor on the earth itself, that measurements

of large belts of the earth's surface began to be made with care and precision. These measurements, which are still being extended and perfected in all civilised countries, and which form the basis of every accurate map, are conducted somewhat in the following way. Two stations (it may be several hundreds of miles apart), which lie as nearly as possible north and south of one another (Fig. 14), are chosen, and the difference of zenith distance of several celestial objects, the sun and stars, is accurately ascertained at the same moment; next what is termed a "base-line" is accurately measured on the ground in feet and inches at one of these stations, and by the method known as triangulation the measurement is extended

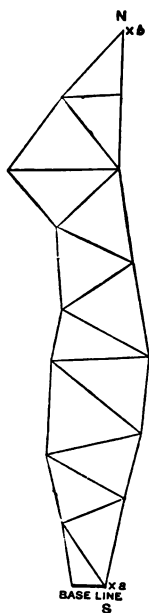


Fig. 14.

over the whole distance to the second station, the distance of which from the first is thus precisely found.¹ As the previously determined differences of zenith distance between the two chosen stations give the number of degrees contained in the length which separates them, the length of a degree in feet or yards or miles can be at once determined; and hence, on the supposition that the length of a degree is uniform, the circumference (360°) of the whole earth in feet, yards, or miles, becomes known.

12. Delicate operations of this kind have now been extended not only in Europe, but in India, Cape Colony, the East India Islands, the United States, Peru, and in Asiatic Russia, and have enabled the figure of the earth to be determined with great accuracy. As a general result from all of these measurements, it is found that the earth's figure is not precisely that of a true sphere; that a degree measures 68·7 English miles in the neighbourhood of the equator and 69·4 miles in the neighbourhood of the poles of the globe; in other words, that to bring about a change in the zenith distance of a celestial object of one degree, it is necessary to travel nearly a mile farther in a north and south direction in the polar than in equatorial parts of the earth. The globe is flattened a little at the polar region, so that a section of it cut through the poles would, on very minute measurement, be found to be not precisely a circle but an ellipse very

¹ The measured base-line is taken as the known side of the primary triangle, and when the angles of this have been measured the lengths of the other sides are readily derived from it. From the sides of this primary triangle a series or network of triangles is extended (advantage being taken of some marked point, hill tops or church spires, for the corner points of the triangles) between the two extreme stations, and the dimen-

closely approaching one, and this figure, which may be described as a flattened sphere, is called a *spheroid*. Minute differences in the result of the degree-measurements in various parts of the earth show further, that the earth varies in different parts slightly from even a truly spheroidal form. So minute, however, are the deviations from true sphericity in the globe, that they could never have been discovered without the aid of powerful instruments and refined calculation; and, as far as any of the phenomena that we shall have to do with here are concerned, it may be assumed that the earth is a perfect sphere with a diameter of 7900 English miles and a circumference of 25,000 miles; a degree, or a 360th part of a great circle of its surface, being sixty-nine statute or sixty geographical miles long.¹

13. In order to describe and compare different parts of the earth's surface, which are so far apart that actual measurement between them is not possible, it becomes necessary to have some means of determining their relative position.

It has already been noted, as a proof of the spherical form of the earth, that as one travels north or south the stars apparently change their altitude. If we could stand at the North Pole, the chief star in the constellation of the Little Bear would appear immediately overhead, and all the others would move round it in horizontal circles. Coming southward, the traveller would see the Pole-star gradually sinking and the stars circling round it dipping beneath the horizon as they turned, till a point was reached at which the stars would seem to rise vertically from the east and set due west of the traveller. Passing this, going still southward, the circles formed by the stars overhead begin again to increase and complete themselves, till at the South Pole, as at the north, the stars would seem to move round in perfectly horizontal circles. The imaginary central line round the earth, midway between the poles, at which the stars rise and set vertically, is termed the *Equator*,² since it divides the globe into two equal halves—a northern and a southern *hemisphere*. A certain distance north or south of the equator corresponds, as we have seen, to a certain change in the apparent height of the stars above the horizon, and the measurement of their altitudes when due north or south, or of the Pole-star

sions of each of these triangles is ascertained by calculation from that of the first from which they spring.

¹ 865,000 feet, as many thousand feet as there are days in the year.

The dimensions of the earth, in the round number on which all calculators are agreed, are as follows:—

Greater or Equatorial diameter	7,926 English miles.
Lesser or Polar diameter	7,899 "
Equatorial circumference	24,900 "
Area of surface	196,900,000 square miles.

² *Lat. æquo*, to make equal.

in the northern hemisphere, gives the means of determining the *latitude* of a particular place, or its distance, expressed in degrees, minutes, and seconds, from the equator, north or south. Imaginary circles, conceived to be drawn parallel to the equator at equal intervals from it to the poles, becoming smaller and smaller as they approach them, are called *parallels of latitude* (Fig. 15).¹

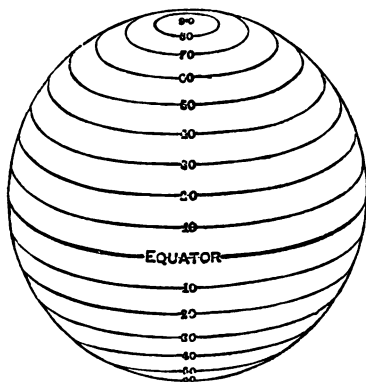


Fig. 15.

Latitude thus determines the distance of a place north or south of the equator, but does not describe its position, for any number of places might lie along the same parallel.

14. To fix the position of a place along its parallel of latitude, reference is made to the *meridian of longitude* upon which it stands. These meridians of longitude are conceived to be drawn from pole to pole through each of the 360 degrees of the equator which they cut at right angles. These lines,

as shown on Fig. 16, differ from the parallel circles of latitude,

which diminish towards the poles, in being all of them great circles like the equator, or having their centres in the centre of the earth. They also differ in having no naturally defined starting-point, such as the parallels of latitude have on the equator. They are all equal; every one of them has as much natural right to be considered the first as any of its fellows. Thus, just in the same spirit as that in which the ancient Greeks believed their land to be the centre of the world, modern nations have chosen generally the meri-

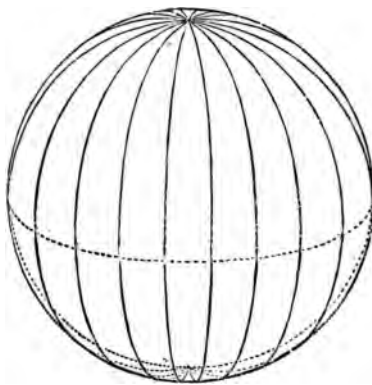


Fig. 16.

¹ *Latitude and Longitude*.—To the ancient Greeks, whose country lay between the

dian of their capital, or of a well-known observatory within their territory (Greenwich, Paris, Washington, Pulkova), as the zero point¹ or initial meridian from which to number the lines of longitude east and west round the world. These lines of longitude are termed *meridians*, because every point along each of them has its midday (*meridies*) at exactly the same moment; it is by observing the change of time at which the sun comes to the meridian of one place as compared with another (most readily accomplished by means of a chronometer set to record the local time of one of them, and carried to the other), that the difference of longitude is determined. Thus Battle lies nearly on the parallel of 51° N.; $51 \times 60 = 3060$ geographical miles north of the equator. The meridian on which it lies is half a degree or $30'$ east of that of Greenwich.* In this case, however, the distance east of the meridian of Greenwich is not represented by 30 geographical miles, for, as may be observed from the figure above, as the meridians gradually converge towards the poles, the degrees of longitude decrease from their value of 60 miles to a degree at the equator, to no extent at all at the pole. Thus the length of a degree of longitude in latitude 51° has decreased from 60 to 38 geographical miles, so that the distance of Battle east of the meridian of Greenwich is only half of 38 or 19 miles.

15. These two sets of lines thus give a framework upon which the relative position of every point, the latitude and longitude of which has been determined, can be laid down. Thus the map of the known world has been gradually extended, and is still in process of being perfected, as voyagers and travellers to different parts of the earth accumulate knowledge of its lands and seas, or improve the existing half-knowledge by more accurate observation.

16. When these lines are laid down and the map is drawn upon the surface of an *artificial globe*, an almost perfect representation of the earth's surface may be obtained; but when the attempt is made to show the countries of the world on a more convenient flat surface, or a map (*mappa*, a towel), it is found to be quite impossible to give a true representation of any large portion of the earth in this way. One may readily understand this by trying to lay down the peel of an orange on a flat surface without breaking it at some point.

17. Thus geographers have been driven to seek the least inac-

Black Sea, the northern shores of which have an almost Polar winter, and the hot deserts of Africa only across the Mediterranean, the habitable earth seemed to be confined within narrow limits from north to south; but from east to west the world they knew offered no such narrow limits. "This latter direction, therefore, came to be considered as that of the earth's *length*, while the dimension along the meridian, or north and south, was its *breadth*; and this mode of speaking still remains to us in the terms Longitude and Latitude."—Cooley.

¹ Generally, but erroneously, called the prime or first meridian. The first meridians lie 1° east and west of the zero meridian.

curate method of *projecting*¹ the rounded surface on the flat one, with the result that several methods are employed, each of which has some advantage or minimum of disadvantage to commend it. In that named the *orthographic* projection (Fig. 17), the eye of the observer is

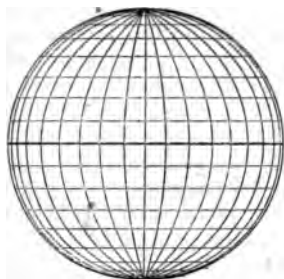


Fig. 17.

conceived to be infinitely distant, so that, when looking at the earth from a point vertically over the equator, the parallels of latitude project themselves as straight lines, and the meridians crowd together towards the outer margin of the representation. For this reason, though the central parts are well shown by this projection, the outer are crowded together and reduced in breadth. Another method of projection of the hemispheres, named the *stereographic* (Fig.

18), is obtained by supposing the eye of the observer to be at the surface of the globe, and to be able to look through the solid sphere as if it were a globe of glass, so as to see the countries which are on the opposite side; these outlines are then drawn as they would project themselves upon a screen stretched over a section of the globe from pole to pole, facing the eye of the observer. On this plan, as shown in the figure, the central countries are somewhat crowded, those on the outer border of the map expanded. To obtain a more equal representation of the

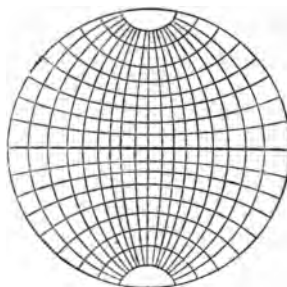


Fig. 18.

equivalent areas marked out by the meridians and parallels, the position of a more favourable point of sight, between those employed in the former projections, has been calculated, giving that which is known as the *globular* projection (Fig. 19), one of the most commonly used. On this, the point of view is assumed to be also vertically over the centre of the plane of projection, at a distance equal to the sine of 45° of the arc of a great circle of the sphere.

By none of these projections, however, can more than half of the

¹ If a flat circular disc be held over a flat surface so that the sunlight comes down perpendicularly upon it, its shadow will be a perfect circle; but if it be inclined, its shadow passes into an ellipse, which will become narrower as the plate is turned, till, when the light falls on the edge only, the shadow becomes a straight line. The shadow here is said to be projected on the surface beneath, and the plan of representing the round surface of the earth on a flat one is also called a *projection*.

earth be shown at a single view, and in none of them are the true bearings of places, one from another, preserved. The entire terrestrial surface, excepting the parts about the poles, can, however, be shown by a method invented by a geographer of Flanders named Gerhard Kremer, who first published his chart in 1556. His device is retained to this day as the basis of all charts for the use of seamen, and is known by the Latinised form of his name as *Mercator's* chart (Fig. 20). The earth is here conceived to have the form of a cylinder, along the length of which the meridians are represented by equidistant straight lines. The parallels are also

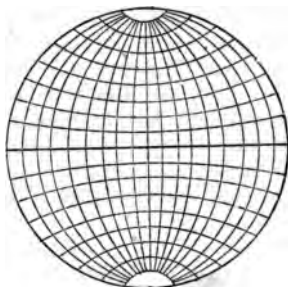


Fig. 19.

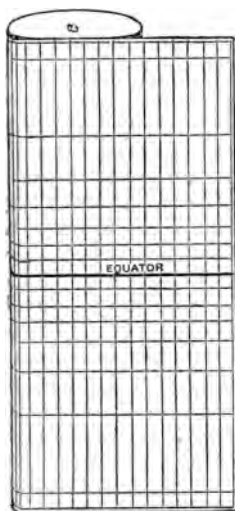


Fig. 20.

represented by straight lines at right angles to the former, but placed at distances which are increased outward from the equator towards the poles, in such a manner that the true shape of every individual part of the land, and its true bearing from every other part, is preserved, though the northern and southern portions of the map, as compared with the equatorial, come to be grossly exaggerated in size. Greenland, for example, appears to be six or eight times as large as the peninsula of India, whereas in reality it is not half as large.

18. When it is desired to represent only one country of the world, such as England, on the map, another plan, which gives more accurate results for such a small area, is adopted. This device may be understood by supposing a cone of paper to be set upon an artificial globe in such a way that the paper touches the globe along the central parallel of the country to be

shown on the map. (In the case of England the cone would be made to touch along the fifty-third parallel.) The meridians and the parallels on each side of this central one are then conceived to be brought up to meet the cone, and to be projected on it along with the outlines of the land between them. When the cone is unfolded, it may be spread out on a flat surface. In

this case the country lying along the central line of the map, where the cone touches upon the sphere, is represented with perfect accuracy; on each side there is a small amount of distortion, which increases as the area included in the map is extended. Almost all the special maps in the second part of this book are drawn upon this plan, or on a modification of it which supposes the cone to cut the globe through *two* parallels of the area to be mapped, which are chosen at such a distance from one another that the error is more equally distributed over the whole map, which is perfect along two lines instead of one only.

II. PROPER MOVEMENTS OF THE EARTH.

1. How long ago it is since men began to doubt the belief that the earth was the fixed centre of the universe, round which the sun and all the heavenly bodies moved in circles, cannot be known, but the germ of the system which bears the name of Copernicus, the astronomer of *Thorn* in Prussia (1473-1543), seems to have existed already in the schools of ancient Greece. Through him, however, the system of the world now known to be the true one, representing the sun to be the centre round which the earth and all the other planets move, first gained definite form, enabling the complex and apparently irregular paths of some of the heavenly bodies to be understood as parts of an orderly system. To Kepler of *Magstadt* in Würtemberg (1571-1630) is due the subsequent discovery that the orbit of the planets is not circular, but elliptical, one focus of the ellipse in each case being occupied by the sun. The revelation of the governing principle of these movements in the grand law of universal gravitation, which gives completeness to the whole plan of the universe, was left for the English Sir Isaac Newton (1642-1727). Later discovery makes it clear that the whole solar system, the sun with all its planets, has itself an onward movement through space.

2. It is, however, with those movements of the earth which directly affect the condition of its surface that we have here to do. The first of these is its movement of *rotation*, whereby it spins round continuously on an imaginary axis which coincides with its polar diameter, the extremities being called the poles. This rotation is from west to east. The second movement is that of *translation* or *revolution* round the sun.

3. Without long-continued and close observation of the movements of the heavenly bodies, it would be impossible to convince

ourselves practically from any external appearances that the earth really moves. We feel no movement, for there is no halt or friction, and the atmosphere which envelopes us, held in its place by gravitation, forms an integral part of the globe in its passage through space, taking as perfect a share in its rotation as the sea or land does. Remembering this, it is not surprising that men accepted the natural and obvious explanation of the apparent change of place of the sun and stars, by believing that they did move round the earth from east to west.

4. But without looking beyond the globe itself, it can be shown by experiments that the evidence of the senses is here in error. An experiment which is a very convincing one, and one that has been made with great care and accuracy,¹ is that of observing the fall of a stone or a shot from a vertical height.

It may readily be understood that if the earth be revolving from west to east, the top of a high tower must describe a larger circle round the centre of the earth than its base, and must move in some degree faster than the ground on which it stands. If, then, a shot be carried to the top of such a tower, it will there acquire a rate of movement, which will be greater than it had at the base of the tower in proportion to the elevation to which it has been carried. If now the shot be let fall, it will retain during its descent the speed of revolution that it has acquired at the top of the tower; it will decline a little eastward from the perpendicular, and will strike the ground on that side of the base of the tower.

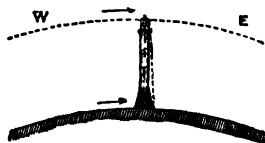


Fig. 21.

A very interesting experimental proof of the earth's rotation, first made by M. Foucault, is afforded by a freely suspended pendulum. The plane of vibration of such a pendulum *appears* to turn in the same direction as the sun, that is in the opposite direction to the earth's rotation on its axis. The pendulum indeed maintains its uniform swing, but the earth turns beneath it. To illustrate this, suppose such a pendulum to be hung over the pole of the earth and swung at starting so as to coincide with the meridian of London ;

¹ The first experiments of this kind were made by Riccioli, in 1640, from the tower Degli Asinelli at Bologna, from a height of 256 feet. Their author erroneously inferred from the results obtained that the earth stood still. Newton, in 1679, maintained that they proved the contrary, but the experiments made at his suggestion by the Royal Society failed to demonstrate this. It was not till about 112 years after this that Guglielmini, of Bologna, made the first satisfactory experiments from the tower Degli Asinelli, by dropping lead bullets upon a cake of wax spread beneath. In 1802 a series of experiments was made by Dr. Benzenberg from St. Michael's Tower in Hamburg, from a height of 250 feet; and in 1831 another extensive series by Professor Reich in the mines of Freiberg in Saxony, with a depth of fall of 520 feet. In all of these the easterly direction was clearly shown.

if it vibrates constantly in the same direction, and it will do so unless disturbed by some force, the revolution of the earth below it once in 24 hours would make it appear as if the plane of the pendulum's motion were turning once round in 24 hours, but in the opposite direction, and it will coincide with every other meridian in turn. This experiment has not actually been made at the pole, but has been tried at many different latitudes between that and the equator, where the effect ceases. In the latitude of London, such a freely suspended pendulum will appear to change its plane of vibration round a circle in about 30 hours.

5. The form which has been assumed by the earth, the flattening of its polar regions and the bulging of the equatorial, is in itself an evidence of the uniform rotation of the earth on an axis, showing as it does the tendency of those parts of the earth which are rotating the most rapidly to overcome the force of gravitation.

6. One most important purpose accomplished by the rotation of the earth is that of maintaining the position of its parts in relation to the sun. But for its rotation, the earth might change its position continually with regard to the sun, the source of its heat and light, with the effect of introducing extraordinary vicissitudes of temperature. The example of a common spinning-top is sufficient to show the effect of rotation in keeping a body in one position, for it is impossible to balance a top with its point on the ground without having caused it to rotate; once set in rapid rotation, however, it requires considerable force to upset it. It is with this very object of keeping a projectile in one constant position, by means of rapid rotation during its flight, that rifling is used in guns and cannon. The top slackens its speed and falls at last because its motion has been overcome by the friction of the point on the ground, and of the air around it. The earth, revolving in empty space, carrying its atmosphere with it, continues to rotate because there is no friction to retard its motion. The most ancient astronomical observations, compared with those of the present day, show that, for 2000 years at least, the earth has not perceptibly slackened its speed of rotation.

7. The turning of the earth on its axis gives the interpretation of most of the apparent movements of the heavenly bodies,—the apparent rising of the sun in the east, its passage across the sky during the day, and its setting in the west, as well as the similar movements of all the stars by night. The turning of any part of the earth towards and away from the illuminating sun into the shadow gives alternate *day* and *night*. The time elapsing between two successive passages of a place beneath the sun gives the astronomical day of 24 hours; the civil day of like period is reckoned

from one midnight to another, or from the moment when the place is farthest turned from the sun till its return to that station. Since every point of earth's surface, from east to west, or along each of the parallels of latitude, necessarily has a different *meridian*, or has its midday at a different time, it follows that at any moment all times of day and night may be found in different parts of the globe. One place on a particular parallel may be turning from shadow into sunlight, and have its morning; while a second, distant eastward from the first by a quarter of the circumference, has its midday; a third, at a like distance farther on, is just revolving from the lighter side of the east into the darkness, and has its evening; and a fourth, a quarter of the circumference farther, is in the deepest of the midnight shadow. Thus, when the parts of America about the Mississippi are revolving into the morning light, it is already noon in the British Isles, evening on the delta of the Ganges in India, and midnight in New Zealand.

8. But the daily rotation of the earth does not interpret all the apparent movements of the heavenly bodies. In a former chapter we have been observing how, day by day and week by week, the sun seems to change its position in the sky; how it rises gradually from the low flat arch it seems to make in midwinter, higher and higher in spring, till at midsummer it takes its highest arch across the heavens, and then sinks gradually back again, throwing longer and longer shadows, till they are longest in midwinter again. Thus, in the course of the period of time we call a year, the sun has completed one series of apparent changes, from its lowest arch to its highest, and back to the lowest again. In this case, as in the former one of the sun's apparent passage across the sky, the first evidence of the senses is that the earth is standing still and the sun moving to and fro in the heavens. The apparent change is, however, in fact due to the real movement of the earth round the sun; and just as one rotation of the earth on its axis gives one *day*, so the time of one revolution of the earth round the sun defines the *year* of $365\frac{1}{4}$ days.

9. Evidence of this second great movement of the earth—that of translation in an orbit round the sun—is not derivable from anything that can be experienced on the earth itself, but depends wholly upon observation of the other heavenly bodies and their apparent movements. To understand these we should consider the distance between the sun and earth, and their comparative sizes.

The distance between sun and earth, as determined by astronomers, is in round numbers 92 millions of miles. If an express train had started to accomplish the distance in the year 1700, and maintained its speed all the way, it would by this time be approaching the sun.

Now with regard to the *magnitude* of the sun. Its diameter is 106 times that of the earth nearly, and in bulk its vast globe is a million and a quarter times greater than that of the earth. Figures, however, give no adequate conception of this enormous disproportion in size ; a more distinct idea will be obtained if we compare the sun to a globe of six feet in diameter ; then the earth on the same scale will be represented by a little pellet of the same diameter as a threepenny piece. Or if you take the length of a page of this book to represent the sun's diameter, that of the earth will be smaller, on the same scale, than one of the letter *o* types on the page. Now, it would be quite contrary to the teaching of the laws of gravitation that such a vast body as the sun should revolve round one comparatively so minute as the earth ; but quite in accordance with it that the earth should belong to a system of planets circling round the sun.

10. The analogous movements of the other planets, as seen from the earth, may be taken as evidence of this orbital movement of the earth. These are seen to disappear and reappear behind the sun, and the telescope shows that each has a greater or less surface enlightened, and has greater or less apparent size, according to its position.

11. By means of the telescope, also, it has been observed that each of the fixed stars apparently describes a small ellipse round its true position within the period of a year, an appearance which can only be interpreted by admitting it to be the effect of the movement of the earth round the sun. These stars are so immensely distant from the earth, even as compared with the sun's distance, that this apparent and very slight change of their position in the heavens can only be determined by close scrutiny, so that to all intents and purposes they are for us fixed, and the interval of time between two successive passages of one of these stars over the meridian of any place (the sidereal day) marks the true time of the earth's revolution on its axis. The interval between two successive passages of the sun over a meridian (the solar day by which we reckon) is, however, observed to be longer by about four minutes than the interval between two passages of a star. Why should this be ? If the earth simply revolved on its axis, and had no other movement, the sun and the stars would reach the meridian after the same interval. The fact is that the solar day does not represent merely one rotation of the earth on its axis, but this movement, combined with that of a movement of translation through space round the sun. This movement of translation through a circuit of 360° round the sun is accomplished in a year, or 365 days ; so that nearly a degree of the circuit is traversed by the earth every day. But a 360th part of a

day of twenty-four hours is four minutes; so that the change of position of the earth due to one day's advance in the annual circuit round the sun corresponds to an addition of four minutes to the time of daily revolution.

The observed difference in length of the sidereal and solar day thus gives us another evidence of the revolution of the earth round the sun.¹

12. But the path of the earth round the sun is not a circle. Accurate measurement of the apparent diameter of the sun at different times shows this to be the case. From one part of the earth's orbit the sun's diameter is measurably smaller; from another it is sensibly larger; and this appearance can result from no other cause than the greater distance of the earth from the sun at one period than at another. The sun's apparent diameter increases up to the beginning of January, and at that time the earth is said to be in *perihelion*² (near the sun); thenceforward till July the apparent size of the sun decreases, so that in July the earth is said to be in *aphelion* (distant from the sun). The change of its distance from the sun between these times is found to be nearly 1-30th of the mean distance, or about three millions of miles. Now, since the sun is the great source of heat, it seems at first sight fair to assume that the amount of heat received by the earth's surface must be much greater at one part of the orbit—that in which it approaches nearest to the sun—than at the other extreme. Here, however, a remarkable law comes in to show that the distribution of heat is after all equalised; for it is found that the angular velocity of the earth in its path varies in such a proportion, that exactly equal amounts of heat are received by it from the sun in passing over equal angles round it.

13. The accompanying diagram (Fig. 22) gives an exaggerated representation of the ellipse of the earth's orbit. If we suppose it to be divided into two segments by the line

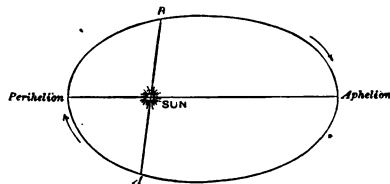


Fig. 22.

¹ It is an interesting experiment, and one that requires no instruments, to establish this fact for ourselves. To do this, it is only necessary to stand to the north of some well-defined vertical object, such as the angle of a house or a flagstaff, and by placing the eye at a certain fixed point, to note by watch the exact times of two disappearances of the same fixed star (choosing a bright one) behind the building. Next, observe the times of two disappearances of the same edge of the sun behind the same vertical line, using a bit of smoked glass to protect the eye, and compare the length of the sidereal day—the interval between the two disappearances of the star—with the solar day, or the interval between the two corresponding passages of the sun.

² *Pert* near, *helios* sun; *apo* from, *helios* sun.

AB passing through the sun, and the earth to circulate from A through the perihelion point round to B, it will have passed through 180° ; and as many degrees will be passed through in completing the circuit from B round through aphelion to A again. But these segments will be passed through in unequal times; that on the side of perihelion in shorter, the opposite in longer time, in proportion to their area; the more rapid passage through the smaller segment compensating for the greater proximity of the earth to the sun there, and thus maintaining an equilibrium of heat-supply from equinox to equinox.

14. Admitting the fact of the earth's motion of translation round the sun, this in itself does not account for the apparent change of the sun's altitude in the heavens from week to week that we have been observing. To explain this we must consider next the position with regard to the sun which the earth maintains in its annual transit. We have seen that, as a consequence of the earth's rotation in free space, its axis must maintain the same direction; that is, it must always remain parallel to itself. Suppose now that this axis were perpendicular to the plane of the movement round the sun, or to an imaginary radius from the sun to the earth, as in Figure 23, the rotation of the earth would bring every part of its surface in succession beneath the sun's light and heat; a great circle passing through the poles would always divide the illuminated from

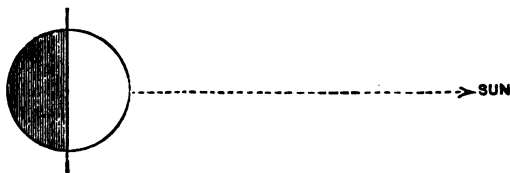


Fig. 23.

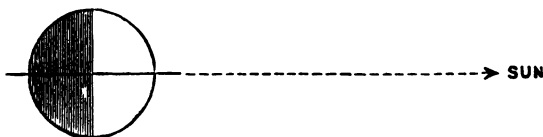


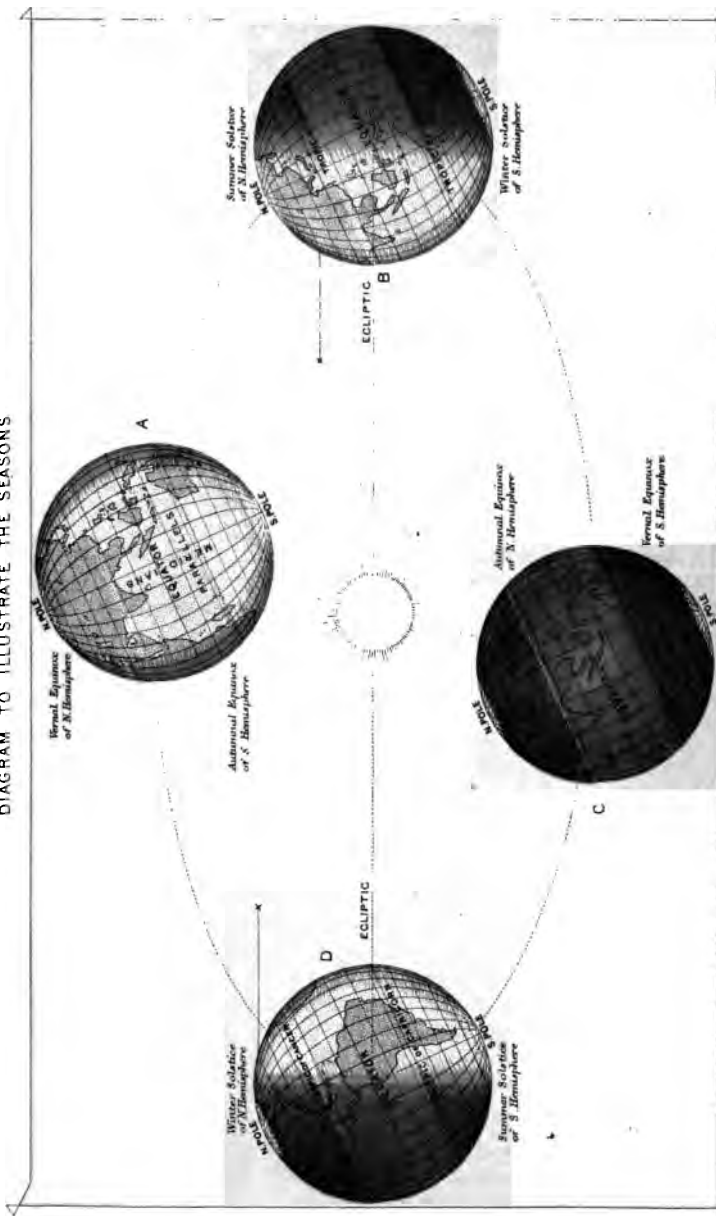
Fig. 24.

the shadow side; day and night would be of equal length all over the world, and all the year round. But now suppose the earth's

1

2

DIAGRAM TO ILLUSTRATE THE SEASONS



Note. The true relative sizes of the Sun and Earth may be estimated by comparing the number of spheres of two feet in diameter, the latter to be a globe of two feet in diameter, and of different numbers of spheres of two feet in diameter, and of different numbers of

The zones are distinguished by colour thus

axis were parallel to the plane of motion round the sun, as in Figure 24, it is evident that during a long period of the passage round the sun, one half of the earth would remain in constant darkness, while the other half had lasting daylight; one side would experience the severest frosts, while the other was burned up with excessive heat.

15. The actual position of the earth's axis is neither that of the first nor the second supposed case, but in an intermediate position, inclined $66\frac{1}{2}^{\circ}$ to the plane of its orbit, called that of the *ecliptic*, being the plane in which eclipses of the sun and moon can alone take place. In other words, the axis of the earth is inclined $23\frac{1}{2}^{\circ}$ from one that would be perpendicular to a ray from the sun.

16. The position which the earth thus occupies relatively to the sun at various stages of its annual round will be best understood by reference to the illustration on the opposite page. This shows the earth at four positions in its orbit, each 90° apart. The shaded portions here represent the dark or night hemisphere, the bright those which are under the sun's light. When the earth is in the positions A and C the sun is vertically over the intersection of the planes of the equator and ecliptic. In these positions, which correspond to those which the earth reaches in March and September, the boundary between the lightened and dark sides runs exactly along a meridian and through the poles. For the time every point on its surface describes half its daily rotation in darkness, half in light; so that day and night are each twelve hours long all over the globe. Hence the term *equinox*. The earth is in the position A at the time of the vernal or spring equinox, and at C during the autumnal equinox, of the northern hemisphere. As the earth reaches the position B, its axis continues to point in the same direction, its northern pole appears to incline more and more towards the sun, allowing a still increasing part of each circle of latitude north of the equator to be reached by the sun, which consequently, to an observer at any part of the northern hemisphere, as in England, seems to rise more and more in the heavens, and to make a higher and larger arch. The days consequently grow longer and longer, till, when the earth has reached the position B, in the month of July, the sun is vertical over the northern tropic or turning point, the *Tropic of Cancer*, and the North Pole with all the lands round it within a radius of $23\frac{1}{2}^{\circ}$, or within the *Arctic Circle*, remains constantly enlightened. At the same time, all within a similar radius round the South Pole turns in continued darkness. This then is the position of the summer *solstice* of the northern hemisphere, so called because when reaching the tropic the sun's meridian altitude varies so little from

day to day as to seem to stand still. Advancing round another quarter of its circuit, the earth approaches the position of the autumnal equinox, when days and nights are again equalised ; passing this, on towards the position D, the southern half of the earth, as you will understand from the illustration, seems to become inclined towards the sun ; to us in the northern hemisphere the sun then seems to travel by a lower and lower arch through the sky, and the days become shorter and shorter. For the southern hemisphere, however, they are now increasing in length, till at last the whole of the circle of $23\frac{1}{2}^{\circ}$ round the South Pole, the *Antarctic* cap of the earth, comes into continued daylight, the sun at the same time reaching its southern turning point or tropic, $23\frac{1}{2}^{\circ}$ south of the equator, called the *Tropic of Capricorn*. This then is the midwinter position of the northern, the midsummer position of the southern hemisphere.

17. We can now understand why it is that the sun's path seems to rise and sink gradually during the year. In the illustration, the true sizes of the sun and earth could not be shown, and we must be careful not to be misled by it. From the immense distance of the sun its rays reach the earth in parallel lines, not in divergent rays as a glance at the illustration might suggest. Remembering this, if you draw a line parallel to a radius from the sun, to meet the latitude of 50° N. (that of south England) on the side of the earth next to the sun in the summer and winter positions B and D, you will notice what a large angle the sun's rays form with the earth at that latitude in midsummer, and how small an angle in winter. Thus it is that in the latitude of London the sun appears to vary in its meridian or midday altitude above our horizon, increasing its arch gradually from one of a height of 15° in midwinter to one of 62° in midsummer.

18. Since the sun is the great source of the heat which is experienced on the surface of the earth, it follows that the *temperature* of any part of the surface mainly depends upon the amount of sunshine it receives. When any part of the earth is turned towards the sun it is receiving heat, when it has turned away from the sun at night into the darkness, it rapidly parts with heat by radiation. As the average temperature of every place on the earth, observed from year to year carefully by thermometer, is found to remain very nearly constant, it follows that the whole quantity of heat received from the sun, and the amount radiated away into space, must be nearly balanced ; there is no accumulation of heat going on in any part of the world, and no rapid increment of cold in any region.

19. The amount of heat received by any place during the year, however, varies not only with the time of its exposure to the sun's rays, or the length of day and night, but in a still greater degree

with the angle of incidence of the solar rays, the apparent height of the sun above its horizon. It is obvious that the rays which fall vertically are the most concentrated of all, and that those which fall slantingly are more diffused, the diffusion increasing with the amount of obliquity. This will be readily understood from the accompanying diagram (Fig. 25), which represents a ray of light of the same breadth striking the ground at three different angles. When it falls perpendicularly it is concentrated on a space of the ground which is only equal to the breadth of the ray ; as the angle of incidence decreases, the heat and light of the ray are spread over a much greater breadth, and are weakened in proportion.

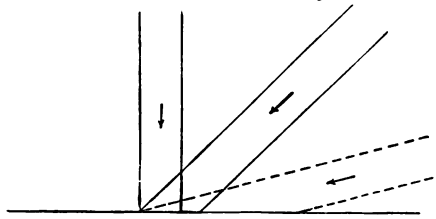


Fig. 25.

20. This fact of decrease of temperature with increasing obliquity of incidence of the sun's rays enables us to understand both those variations of temperature which are experienced between the poles and the equator, and the changes of warmth during the period of a day, from the cool morning, when the earth is turning to meet the sun's almost level rays up to the heat of midday, when its light is pouring down upon us from the crown of its arch in the sky.

21. Thus the equatorial regions of the globe, receiving the most direct rays, are the hottest of all ; the zone between the two tropics, or apparent turning points of the sun, in which the sun can never appear at a greater distance than twice the distance of each tropic from the equator ($23\frac{1}{2} + 23\frac{1}{2}$), or 47° from the zenith of an observer in any part of the zone, is on this account called the *torrid* or hot zone. It has little seasonal change. Between the tropics and the Arctic and Antarctic circle, the sun's midday altitude has a range nearly from the zenith, on the borders of each tropic, down to the horizon on the skirts of the polar circles ; the belts marked out between the tropics and the polar circles are thus called the *temperate* zones, and have very marked seasonal changes. The caps of the globe within the polar circles, each of which receives but scanty heat from the almost horizontal rays of the sun during its long daylight, and is in the shadow side of the earth for a considerable period of each year, are the coldest parts of the earth, and are thus appropriately called the *frigid* zones, or the *Arctic* and

Antarctic regions. In these the sun never appears at a higher level above the horizon than twice $23\frac{1}{2}$, or 47 degrees.

22. A ray of sunlight, besides being more diffused or spread over a larger space in reaching the earth at a low angle, loses part of its heat by absorption in the earth's atmosphere: the farther a ray has to pass through the air, or the more obliquely it falls, the more its heat will then be *absorbed*. Part is also *reflected* from the atmosphere, and thus lost to the earth, the loss on this account being also greater the more the obliquity increases.

23. From all these considerations it results that in comparison with the amount of heat received by the earth from the vertical sun, the quantity is reduced by about a fourth when the sun's meridional altitude is 60° , by a third when it is 50° , by nearly a half when it is 35° , and by about three-fourths of its amount when the sun's altitude is 25° . When the sun's arch is as little as 5° above the horizon, the comparative amount of heat received from its rays is but $\frac{1}{16}$ th part of that given by the vertical sun; a result which enables us to understand why it is that during the long-continued daylight experienced within the polar circles for six months of the year, the ice which characterises these regions is *not* entirely melted away by the sun's rays.

24. If there were no other circumstances affecting the distribution of the sun's heat, or if the earth were perfectly uniform in surface, the temperature of each belt would decrease equally at each season by the parallels of latitude from the equator to the poles, and the zones, torrid, temperate, and frigid, with their definite boundaries, would be precise limits of climate; but other causes intervene to disturb the regularity of these divisions, and this leads us to consider next the distribution of land and water on the globe.

III. DISTRIBUTION OF LAND AND SEA.

1. We have noticed in the foregoing sketch of the progress of discovery how for centuries after Columbus had crossed the Atlantic, and Magellan had sailed through the vast breadth of the Pacific Ocean, men clung still to the idea of a great southern continent, a land that must exist, it was thought, to maintain the balance of the great continents, the coast-lines of which were beginning to be known in the northern hemisphere; how Tasman, when he discovered New Zealand, following this idea, believed it to be no other than a part of Staaten Land which his countrymen Schouten and Lemaire had seen to southward of Magellan's Strait; and how it was not till *Cook*, in his great voyages during the eighteenth century, had sailed

back and forward zigzag all through the region in which this mythical southern continent had been depicted upon the maps of the world, finding nothing but sea up to the ice-barriers of the Antarctic region, that the enormous expanse of water in the southern hemisphere of the globe was finally realised.

2. Now that all, or very nearly all, the coast-lines of the globe have been mapped out, it requires but a glance at the chart of the world to convince oneself that the sea covers a far greater portion of the earth's surface than is exposed as dry land. About three quarters of the surface is occupied by ocean, leaving only one quarter above the sea; or, if we measure still more accurately, we find that of the 197 millions of square miles of the globe's superficial area, 52 millions only are occupied by land, and 145 millions by water.

3. It is also evident that the distribution of land and sea is a very irregular one; that the land is crowded together in that hemisphere which is north of the equator, and that this half of the globe has nearly three times as much land as the corresponding southern half. If, however, we suppose the globe to be divided into hemispheres, one of which has its pole in southern England, the other near New Zealand, and draw a map of the world on this plan, as in the figure (Fig. 26), the contrast in the distribution of land and water is brought out most clearly of all. The hemisphere with England as its centre embraces nearly all Europe, Asia, and Africa, besides North America and South America except its southern prolongation; while the other hemisphere, of which New Zealand is the centre, shows no land except this, and Australia, the East India Islands, and the long southern cape of South America. On this account the halves of the globe shown in the figure have been called the continental or *land* and the oceanic or *water* hemispheres.

4. In looking at the chart the general outward similarity in the form of the great masses of the land called the continents¹ cannot fail to be noted as a remarkable feature. Each of the four, as shown in the land hemisphere—Asia, Africa, North America, and South America—is massive and broad toward the north, but tapering and wedge-like to the south. The islands or fragmentary parts of the land appear as a rule to the south and east of the continents; the East Indian Archipelago to the south-east of Asia, Madagascar to the south-east of Africa, the West Indian Islands to the south-east of North America, the Falkland Islands to the south-east of South America.

5. While there is a general similarity in the form of the masses of the land, strong contrasts are presented when we come to look at

¹ *Con* "together," and *teneo* "I hold."

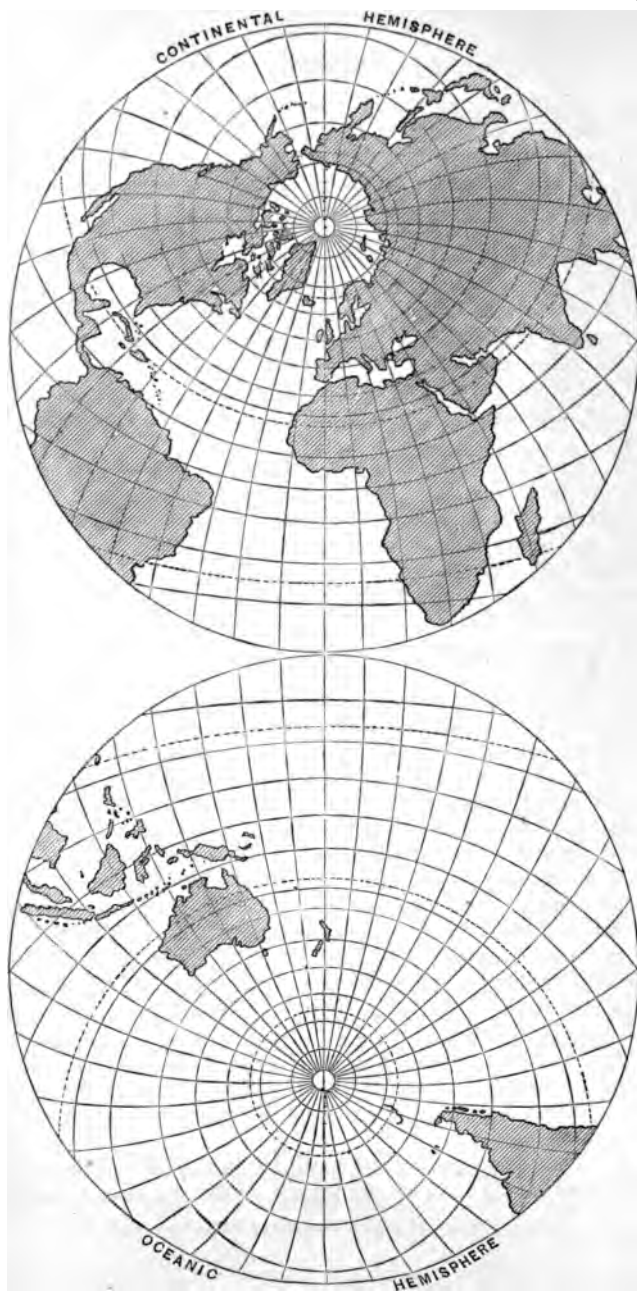


Fig. 26.

their outline more in detail. Some reach out in spreading members, others are rounded and compact. Looking at the continent of Europe and Asia, we see that it is deeply cut into by arms and bays of the ocean, between which corresponding promontories and peninsulas¹ of the land run out. On the European side are the great inlets of the Mediterranean and the Baltic, corresponding to a series of peninsulas such as those of Spain, Italy, Greece, Denmark, and Scandinavia. On the opposite side, the continent also branches out in the peninsulas of Kamtchatka and Corea, in the great promontories of further India, Hindustan, and Arabia. Africa by contrast is rounded and close in outline, and has no single deep inlet in its coast-line. Its rounded form is nearly copied in Australia and in South America, but North America, like Asia and Europe, has deep bays and branching arms on both coasts, such as those of Alaska and California on the Pacific side, and Labrador, Nova Scotia, and Florida on the Atlantic coast-line.

6. When taken in connection with the history of the progress of discovery, and after that of the gradual spread of knowledge and civilisation over the earth, this study of the external form of the lands of the globe, and the shape of their coast-line, becomes one of remarkable interest. Discovery has always advanced far more rapidly by sea than by land. Now those parts of the land which are most easily approached by sea from any direction are the small fragments of it (the islands) which are bathed on all sides by the ocean; after these, in point of accessibility, come those shores in which deep inlets and projecting peninsulas give smoother water and shelter to approaching ships. Those coasts which are rounded and unbroken and exposed to the unchecked power of the ocean, on the other hand, refuse a harbour to the approaching vessel, or an easy landing to its crew.

7. In a former paragraph it has been stated that the position of any point on the surface of the earth is determined by reference to its *latitude*, its distance north or south of the central line of the equator; and *longitude*, its distance east or west of a chosen zero meridian, at right angles to the former. This, however, is still an imperfect determination, for it omits the consideration of the elevation of the point on the earth's surface in respect to other neighbouring points. The third co-ordinate of *elevation* is necessary to a perfect definition of position.

8. Since for the purpose of comparison all measurements of height or depth must be referred to one uniform datum line or starting point, the level of the surface of the sea has been adopted as giving the zero line of all measurements of so-called *absolute*

¹ *Pene* "almost," *insula*, "an island."

height above, or absolute depth beneath, this level on the earth's surface. A distinction must of course be drawn between measurements from this base and the *relative* heights or depths of any points, such as the elevation of a mountain peak above the neighbouring plain, or the depth of the bed of a lake beneath the level of its surface water.

9. It would carry us too far away from our subject to discuss here the various methods which are employed in determining elevation, by means of the barometer, which shows the amount of atmosphere left beneath the observer in ascending, or by trigonometrical measurement with the theodolite; or to describe the method of measuring depth by the sounding line.

10. As yet this third element of elevation has been determined with precision for comparatively few points of the earth's surface; though, by means of the convenient barometer, a good general idea has been obtained of the absolute height of large areas of the land. Accurate depth-measurements from which the form of the sea bed can be obtained are as yet fewer in number, but we are receiving additions every year.

11. Let us glance, then, first, at what is known of this general elevation of the continents. The greatest absolute elevation that has been measured is that of the summit of Mount Everest in the Himalaya range, north of India, 29,002 feet, or $5\frac{1}{2}$ English miles, above the sea level. It is useful to compare this great elevation with the diameter of the globe, both to gain an idea of the size of the earth, and of the insignificance of even such a mountain range as the Himalaya when compared with its mass. The height of Mount Everest does not amount to a 1400th part of the diameter of the earth; or, if we suppose the earth to be represented by a globe of 14 inches in diameter, the highest mountain shown on this scale would not amount to the 100th part of an inch, or would come within the thickness of a sheet of paper laid on the globe. It must be remembered, however, that Mount Everest is only a single point in a range, the *average* elevation of which does not much exceed half the height of its summits.

12. The average elevation of the whole of the land of the globe, again, is very small in comparison with that of the range of the Himalaya. As yet the number of elevations that have been determined are too few to enable any accurate estimate of the mean elevation of all the land above the sea level to be made; but present knowledge indicates that this may be safely assumed at about 1500 feet. If then the greatest height of all on the earth's surface would lie within the thickness of a sheet of paper laid upon our supposed globe, a tenth part of this thickness would nearly represent the average height of the land above the sea level.

13. Only within recent years, and chiefly in connection with the laying of telegraph cables from one continent to another, has attention been turned to the question of the depth of the sea and the form of its bed beyond the mere margin of its shores. The North Atlantic has now been sounded in many directions, so that a general plan of its trough can be made with some accuracy ; elsewhere, as in the South Atlantic, the Indian Ocean, and Pacific, accurate soundings are as yet fewer in number. The greatest depth yet found by trustworthy sounding does not exceed 27,900 feet, a depth which was found by the scientific expedition sent by the United States in 1873, near the Kurile Islands, north of Japan in the Pacific. Greater depths than this may remain to be found in the still unsounded regions of the sea bed. Although no depth has yet been sounded that exceeds the greatest height known on the land, the average depth of the sea proves to be very much greater than the mean elevation of the land. The average depth of the Atlantic amounts to about 12,000 feet, and there is every reason to believe that the Pacific and the other great oceans are not shallower than this.

14. The average depth of the sea, then, is at least eight times the mean height of the continental land ; and the oceanic water on the earth occupies fully eighteen times as much space as the land which rises above its surface level. This contrast will be made more striking if we suppose that all the continents could be pared off from the globe at the line of the sea level and gathered up. If then this mass was thrown into the trough of the North Atlantic, it would not half fill it up.

15. At first sight there appears to be no general relation subsisting between the distribution of height on one continent and on another. The two Americas indeed correspond remarkably in having their greatest height along their western borders, but in Asia and Africa and Australia the highest lands lie towards the opposite margins of the continents. A closer study of the great lines of height on the globe, however, discloses some very remarkable points of correspondence throughout their whole system. It is first observed that the higher parts of each continent rise towards one or other margin of the mass of land—not centrally ; next that these heights descend more steeply towards that coast of the continent nearest which they rise, and sink with a more gentle descent on the opposite side, the farthest from the sea. Still further, it is noticed that almost all the greater heights of the land lie on those sides of the continents which are nearest to the greater areas of water, the Pacific and Indian Oceans ; and that almost all the more gentle slopes, and the broad plains extending from them, lie round

the narrower divisions of the water, the Atlantic and Arctic Oceans.

16. If we were to make a tour of the shores of the Pacific and Indian Oceans, we should pass in succession all the highest mountains of the world. Starting at Cape Horn, we would keep in sight of the vast range of the Andes all along the South American coast for 5000 miles; sailing on by the Isthmus of Panama, the high volcanoes of Central America would come in view; next, the high western edge of the table-land of Mexico, then the Sierra Nevada of California, and after that the Cascade Range, and the lofty peak of Mount St. Elias seen fifty miles out at sea. The chain of high volcanoes of the Aleutian Islands would guide us across to the mountains of Kamtchatka, the mountains of Corea, and the Khinghan Range, which form the eastern slope of the great table-land of Asia. The outliers of the Peling and Nanling mountains of China would next pass in review. From the Indian Ocean we might approach the base of the giant range of the Himalaya; from the Arabian Sea the buttresses of the plateau of Persia. All along the African coast of the Indian Ocean also we should have the highest land of that continent near at hand; from the Abyssinian heights in the north, past the snowy peaks of Kenia and Kilimanjaro, near the equator, to the Drakenberg of Natal and the terraced ranges of Cape Colony.

17. Thus we have seen that all the highest lands, with scarcely one exception, lie close to the borders of the greatest expanse of ocean on the globe, and in most cases rise directly from its waters. If we were to climb any of these steep buttresses that we have been looking at in making the circuit of the Pacific and Indian Oceans, and pass over their summits, we should find that in almost every case the inner slope was a comparatively short one, that the land immediately behind them appeared as a high table-land or plateau of more level character; farther, that this plateau was enclosed on the landward side by a second range of heights running roughly parallel to the coast range at a greater or less distance from it. On crossing this second ridge, however, we should find the land descending by a gradual slope to low plains which stretched away for hundreds of miles to the Atlantic or Arctic coast.

18. This general form of the land will be made clearer by comparing the accompanying diagrams, which represent sections, greatly exaggerated in vertical scale, through South and North America, Asia, and Africa.

19. If we were to climb the steep slope of the Andes from the Pacific shores and cross the summit by one of the passes, we should find ourselves on the high table-lands, it may be of Bolivia, of Peru, or Ecuador, which are supported between the lines of the Cordilleras

at an average elevation of 12,000 feet above the sea. Behind the Sierra Madre of Mexico we should find ourselves on the great table-

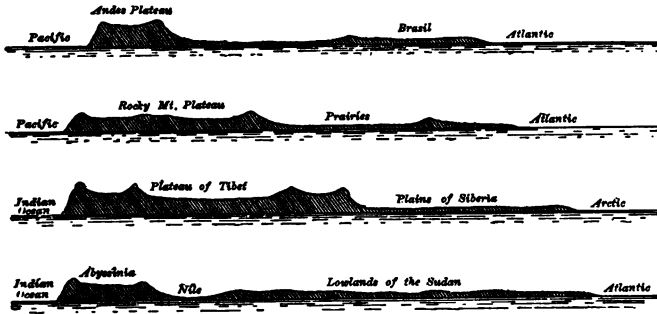


Fig. 27.

land of Anahuac, everywhere about 7500 feet above the sea level. Farther north, across the Sierra Nevada or the Cascade Mountains, the great plateau of the Western United States would be reached spreading out to the Rocky Mountain ranges which support it on the landward side. In Asia, if we ascended the Khinghan Mountains or the Himalaya, we should find ourselves on the great plateau of Tibet, where rivers are navigated at an elevation of 14,000 feet above the sea; and the land would remain high as we advanced into the interior of the continent, until the second inclosing ranges of the Altai and Thian Shan mountains were crossed, when the land would be found to sink in the low plains of Siberia. Or again, if the steep edge of the mountains which rise from the Red Sea had been climbed, we should stand on the high plateau of Abyssinia, with its pastoral plains 7000 feet above the sea level, and crossing its opposite border, should descend to the valley of the Nile and the lowlands of the Sudan, which extend all the way to the Niger and the Atlantic.

20. The mountains which rise round the Mediterranean, in southern Europe and north Africa, may not exhibit this system of distribution of height so completely. Still if we look at the general form of the Alps we shall see that their steeper slope is to the south, and that they support the Bavarian plateau on the continental side. The mountains of Algeria also have their steepest descent to the Mediterranean, and enclose the high plateau of Barbary between their coast ranges and the inner Sahara Border Range, as it has been called, crossing which one would descend gradually to the lowlands of the desert. The general form

of the heights is here the same as in the greater elevations. If we come to Australia we shall find the same system of distribution. The Australian Alps lie close to the Pacific border of the continent; behind them are the high pastoral "downs," and from them the land sinks away to the lowlands which form all the remainder of the great island.

21. Having gained a general idea of the distribution of land on the earth's surface, of its extent, and of the broad features of the relief or elevation of the continents, we now come to consider the general character of the different regions of the land as they are adapted for the habitation and development of mankind, as well as of the animal and vegetable populations of the earth.

IV. CAUSES WHICH DETERMINE CLIMATE.

1. The chief circumstance that determines the character of any region of the land, and the abundance or limitation of vegetable and animal forms upon it, is that of climate. Now the principal element in the formation of climate is, as we have already seen, the distribution of the sun's heat, the length of day and night, and the duration of the seasons. It was the observation of the effect of the varying slope of the sun's rays in countries lying north and south of one another that led Ptolemy, the geographer of Alexandria, to divide the earth into *climates*,¹ or zones differing in the length of their longest day. But there are a number of causes in operation which very considerably modify the manner of reception and distribution of the sun's heat and the effects of it on the earth's surface, all of which are taken into account in what is now understood by climate, a term which groups together all those external circumstances which give character to any region of the earth. We propose then to find out what these modifying causes of climate, in its old acceptation, are, and then to survey the general results of varying climate shown in the general character of the different regions of the land.

2. We have just been considering the relief of the land of the globe and the difference of elevation of its surface. Every one who has climbed a mountain must have observed how the air became cooler as he got up higher, and that it was colder at the top than it had been at the bottom. Why this should be the case may be understood when we learn that the air is warmed, not by the direct passage of the sun's rays through it, since but little heat is absorbed in this way by the atmosphere, but chiefly by contact with the

¹ κλίματα, slopes or inclinations.

warmed surface of the earth ; hence it is evident that the lowest strata of the air, in immediate contact with the earth, will be most heated by the sun's rays, the upper least of all. The upper air, also, subjected to less pressure, occupies greater space, and a loss of heat attends this expansion or separation of its particles ; and the less covering of atmosphere there is, the more rapidly can radiation of heat take place from the earth. The rate at which temperature diminishes with elevation is generally stated to be about 1° of the scale of Fahrenheit's thermometer for every 300 feet of ascent ; but on mountains this varies very much according to situation and season.

3. The clearest evidence of the existence of such a decrease of temperature with elevation is afforded by the snow-clad summits which may be seen even in the tropical zone. Mount Kilimanjaro, for example, rises on the eastern heights of Africa, almost under the equator, and snow lies all the year round on its summit above an elevation of 16,400 feet. The average temperature of the air at the sea level in this part of Africa is about 85° F., an almost burning heat, but the presence of the snow on this mountain shows that the temperature at 16,400 feet must average less than 32° . But snow does not remain unmelted at the level of the sea in any parts of the earth excepting the polar regions. From this it is evident that a change of elevation of a few thousand feet at the equator produces a change of temperature-climate as great as would be experienced in sailing from the equator 6000 miles to the frozen regions of the poles. Thus also, two places at the same distance from the equator, each receiving the same amount of sunlight, having days of the same length, and experiencing the same changes of season, but one of them elevated, the other low-lying, may have a very different climate. The elevation of the land thus introduces one very important modification of the climate due to latitude.

4. A second modification, scarcely less considerable, is due to the situation of different parts of the continents with reference to the ocean ; for land and water differ very greatly in their manner of reception of the sun's heat, and in their powers of conducting and retaining it. The heat which falls upon the *land* is arrested by a thin layer of the surface soil, the particles of which, having no movement among one another, cannot communicate their warmth downward except by the slow process known as conduction. This daily process of heating downwards ceases to be perceptible generally at a depth of four feet from the surface, but varies according to the nature of the soil. Bare desert sand, for example, has so little conducting power, that the sun's heat accumulates during the day on the very surface layer till it is raised to an intense heat. Where

vegetation, such as grass, covers the land, the temperature does not rise so rapidly, for part of the heat is spent in evaporating the moisture of the plants, and their blades, in free contact with the air, give off to it their superfluous warmth. Where forests cover the ground, the change of temperature during the day is much retarded; observation shows that the trees do not reach their maximum temperature till after sunset, and they thus store up the heat of day against the cold of night. The heat rays which descend upon the *ocean* are not stopped and accumulated at the surface as on the land, but penetrate to some depth—not, however, by conduction. The action of waves tends to diffuse their heat through the surface stratum; but evaporation, on the other hand, is always reducing the temperature. And the “specific heat” of water is very great. It requires more heat to raise its temperature by one degree than it does to increase the temperature of almost any other substance by a like amount. The amount of heat that would raise a pound of water one degree, would produce an equivalent rise of temperature in four pounds of chalk or nine pounds of iron.

Hence the temperature of the sea in any latitude cannot be raised to the same degree as that of the land on the same parallel receiving the same amount of sunlight. But, for the same reasons, the sea retains its heat much longer than the land.

5. Now, since the temperature of the atmosphere depends mainly upon the heat radiated upward from the surface upon which it rests, the air over the land must be heated in a different degree from that which lies over the ocean. During the long days of their summer, the temperature of the great masses of land in the northern or southern hemispheres becomes much warmer than the ocean on each side of them; but in winter the land, and the air over it, falls to a much lower temperature than the heat-storing ocean. This brings about a difference of climate between those regions of the land which lie nearest the sea and the interior countries of the continent. The temperature of a country bordering on the sea in the temperate zone is lowered in summer by the presence of the more slowly warming sea nearer it; in winter, however, its temperature does not fall so low as it otherwise would, for the sea round it has stored up the warmth of summer, and quantities of moist air flow over the cooler land, bringing with them and distributing the warmth of the sun in winter rains. Countries lying far from the sea have, in contrast to this, great heat in summer and excessive cold in winter. Thus the unequal reception of heat by land and sea introduces the modification known as the insular or maritime and the continental climate, the one more uniform, the other excessive. Our climate in the British Isles is decidedly a maritime one, its average temperature

ranging from about 40° to 60° F. In central Asia, however, in the same latitude, and at the same height above the sea, the average temperature ranges from 0° ¹ in winter to about 70° in summer. The temperature of the British Isles surrounded by the sea thus varies only 20° on an average during the year, but that of the centre of the continent in the same latitude changes to the extent of 70° .

6. In bringing about this difference of maritime and continental climate, especially in aiding to equalise that of the coast regions, the movements of the air brought about by the unequal heating of land and sea play an important part. The movement of air due to heat at one point is familiarly illustrated in the draught which ascends the chimney over a fire, or the current from outside into a warm room when the door or window is opened. Heat accumulating rapidly on the surface of the land during the day causes an ascending current, towards which the cooler air is drawn from over the sea, which, as we have seen, takes a far longer time to become warmed. At night the land radiates its heat rapidly, the temperature of the air over it falls below that of the neighbouring sea, the air is thus made dense, the current is reversed, and the wind blows seaward. This is the origin of the *land and sea breezes* which alternate on the coasts of all countries in warm latitudes; it explains also the much more extensive movements of the atmosphere caused by the excessive heating of the continental lands during their summer and their excessive cooling during winter.

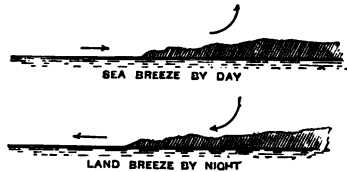


Fig. 28.

Excess of heat in summer produces an expansion and an upward current, which draws the winds inward to the continent from all sides; excess of cold in winter, on the other hand, tends to increase the density of the air over the continent, and to bring about a downward or outward flow of it to all sides. Thus the winds round each of the continents have a more or less regular periodical or seasonal flow—into the continent during its summer, and out of it on all sides when its winter cold is greatest. This movement is most marked in the largest of the continents, that of Asia, and the periodical winds round its south and eastern borders are on this account known as the *monsoons*, a name adopted from the Arabic word *Mausim*, a season.

7. Over the belt of the equatorial region of the globe which is beneath the vertical sun, where the heat is greatest and evaporation

¹ Or 32° below freezing point.

most rapid, an ascending current of air rises at all seasons; to supply the place of the air which is thus raised, cooler denser air flows in-horizontally from north and south towards the equatorial region, forming the most constant of the great atmospheric currents known on the globe, the *trade winds*. But air which is drawn towards the equator from, say, N. lat. 25° , has at first a velocity of rotation (W. to E.) which is less than that of the places it will in succession reach (since in 24 hours it describes a smaller circle); these places,

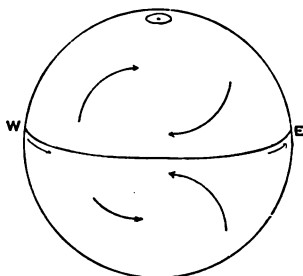


Fig. 29.

then, in their movement from W. to E., strike against the air which is being drawn from the north; hence the trade winds of the northern hemisphere appear as N.E. winds, and similarly those of the southern hemisphere as S.E. winds.

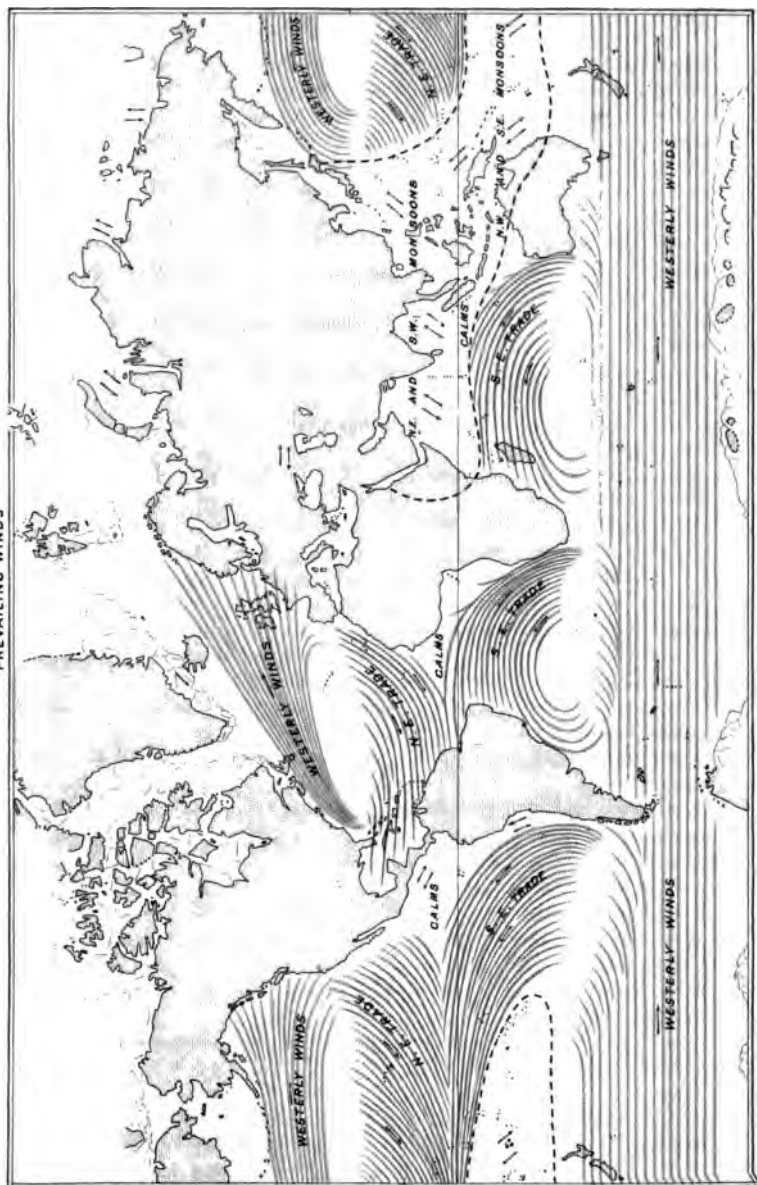
8. The return currents towards the poles, which restore to the north temperate regions the air which has been drawn from them to supply the trade winds, appear in like manner not as direct southerly or northerly winds, but as the south-westerly winds with which we are familiar, and as the north-westerly currents of the southern temperate latitudes.

9. It would take us too far from our subject to examine here the other complex agencies which bring about the manifold movements of the atmosphere; sufficient has perhaps been said to enable us to understand how the winds blowing generally from colder to warmer regions of the earth along its surface strive continually to equalise the temperature of the air over the whole globe, and to reduce the excessive variations of climate which would result from the absence of their powerful agency.

10. The accompanying charts indicate the direction of the greater currents of the atmosphere during the year. In looking at them, however, we must be careful to remember that they represent only the average of the many variations of direction that are brought about by local, changing, circumstances, which would require a chart for every day, perhaps for *every hour*, to represent them adequately. Even the so-called constant trade winds vary in position with each season, moving to and fro with the vertical sun between the tropics, and changing in strength with every hour of the day.

11. A fourth very important agent in modifying the climate due to latitude is present in the continual circulation of the waters of the ocean. Here we may leave out of consideration those swell-

PREVAILING WINDS



ings and fallings of the ocean which take place twice within the lunar day, called the tides, brought about by the attraction of the moon and sun on the waters of the globe. The undulation thus formed involves no onward movement of the water in the open ocean, no circulation of its particles; and it is only along the immediate shore that the tidal undulation is converted by the opposing land into an actual forward or sideward movement of the water. The tides play but a very insignificant part in the movements or interchange of the waters, and have no appreciable influence in modifying the climate of any part of the globe.

12. The great causes of circulation in the waters, like those which set the air in motion, operate at the surface of the earth itself, and though very various in their modes, are all referable, directly or indirectly, to the distribution of the sun's heat.

13. The grandest movement of circulation in the waters of the ocean is one which, it is now generally admitted, is caused by the differences of temperature of the polar and equatorial regions of the globe. The point of maximum density of fresh water is 39° F., and it freezes at 32° F.; but the salt water of the ocean does not solidify into ice till it has cooled down to 27° , or even to 25° if it is very saline, and its point of maximum density is still two degrees lower than this. When the water of the Arctic or Antarctic polar seas is cooled down to near this temperature, its greater weight gives it a tendency to sink and displace the water of less specific gravity beneath it. In this way a disturbance of equilibrium may be gradually brought about, and a very gradual "creeping flow" of the polar waters takes place along the floor of the ocean towards the equatorial region. To compensate this movement, the upper, warmer and lighter, stratum of water from the equatorial region is drawn north and south, and floats towards each polar region. The thermometers sent down with the sounding lines in each of the great sea-basins conclusively show that such an interchange of polar and equatorial water does take place; for it is found that the ocean water, in the greatest depths of the equatorial seas, has a temperature only a degree or two above the freezing point; and that only a comparatively shallow upper stratum of the surface water within the tropics is at a high temperature.¹

¹ Other causes than the difference of temperature may be at work in producing or aiding this circulation. One high authority² considers the influx of cold water along the floor of the ocean, from the Antarctic regions, to be solely due to the "excess of evaporation over precipitation in the northern portion of the land hemisphere, and the excess of precipitation over evaporation in the middle and southern part of the water hemisphere." We have yet to learn, however, from actual observation, that there is an excess of precipitation over evaporation in the southern hemisphere. Quite the contrary view seems *prima facie* to be the reasonable one, that evaporation is in excess in the southern or water hemisphere, precipitation in excess of evaporation in the northern or land hemisphere of the globe.

² Sir Wyville Thomson.

Thus, in course of time, every drop of water in the ocean may pass from the poles to the equator and back again, and from the greatest depths up to the surface.

14. Much more important in their relation to climate than this gradual interchange of the ocean waters in its vertical circulation, are the superficial movements of the ocean waters in horizontal directions, forming the streams which are known as *ocean currents*. Among the various agencies which are at work upon the exposed surface of the ocean in producing these movements, the winds are the most active and powerful. Beneath the trade winds, in each hemisphere, great equatorial currents are found in each of the oceans, the Atlantic, the Indian Ocean, and the Pacific. Meeting and moving westward together, these equatorial streams reach the shores of continents which interrupt their path, and since the pressure of the wind continues from behind, the accumulated water escapes northward and southward. Thus, in the Atlantic, part of the water, carried westward to the American shores by the equatorial streams, turns south along the Brazilian coast, but the greater portion, passing into the Caribbean Sea and the Gulf of Mexico, escapes thence by the narrows of Florida as the well-known *Gulf Stream*. A third part of the excess of water drawn westward escapes back again eastward between the main branches of the equatorial streams, and forms the counter-stream known as the Guinea current.

15. In the Pacific this system is developed on a still larger scale, and there the water carried westward escapes, as in the Atlantic, south and north by the coast of Australia, through the channels of the East India Islands, and by the great *Japan current*, called the Kuro Siwo, or black stream, the counterpart of the Gulf Stream of the Atlantic. Part also returns towards America as a central equatorial stream. In the Indian Ocean also the equatorial currents meeting the African coast escape southward by the *Mozambique current*, which flows down the East African coast to Cape Colony, and at some seasons also they find their way northward into the Arabian Sea. The currents of the north Indian Ocean are, however, controlled entirely in their movements by the monsoon winds, and thus change their direction completely in the course of the year, giving the clearest possible evidence of the power of the winds in the formation of these ocean streams.

16. Since the waters drawn forward by the trade winds to supply the great equatorial currents must be continually replaced, a series of supplying currents are formed, which complete the circulation. The finest examples of these are found in the great water expanse of the southern hemisphere; in the Humboldt or *Peruvian current*, which feeds the trade-wind stream along the west coast of

1

OCEAN CURRENTS



London. Published by Edward Stauffer, 55, Charing Cross, Feb. 16, 1892.

South America ; in the similarly formed *South Atlantic current* on the west coast of South Africa ; and in its counterpart, the west *Australian current*, passing into the trade-wind region of the south Indian Ocean. The indraught currents of the north Atlantic between Spain and the Azores, and of the Pacific opposite the shores of north California, are of exactly the same character.

17. But the indrawing by the trade-wind currents is only in part the cause of these supplying streams ; for the waters of the temperate region in each hemisphere are being borne forward, just as the currents beneath the trade winds, by the westerly winds, the return current of the trades, which prevail in these latitudes. As almost the whole of the Southern Ocean in temperate latitudes is encircled by water, there consequently the westerly winds have their greatest influence, and the whole surface of the ocean appears to have an eastward movement under their influence in the general current known as the *Antarctic drift*. In the northern hemisphere the Gulf Stream, escaping from the basin which gives its name, flows northward along the coast of the United States as far as Newfoundland, with the momentum given it by the "head" of water in the Gulf of Mexico ; but in doing so it becomes merged in the general drift of the ocean in a north-easterly direction under the south-west winds, and supplies this drift current with part of the warmed waters that it carries past the British Isles and Norway into the Arctic Gulf between Spitzbergen and Novaya Zemlya.

Just in the same way the Japan current is taken up and continued by the westerly wind drift of the Pacific, to be carried back to the American coast and round again by the equatorial stream.

18. Though Bering Strait, the connecting channel between the Arctic and Pacific Oceans, is about thirty-six miles wide, it is so shallow that its existence scarcely affects the conditions of the ocean on either side of it : the Arctic Sea, indeed, may be considered as a great gulf enclosed between North America and Siberia, partly blocked up at its mouth by the mass of Greenland, with one broad opening into it between Greenland and Norway, and a number of narrower connecting channels between Greenland and the islands of the American archipelago. We have seen that the westerly winds drift before them a great volume of water from southern latitudes past the British Isles and Norway into the Arctic Gulf between Spitzbergen and Novaya Zemlya. This water escapes again from the closed sea, in the same way as the accumulated water of the Caribbean Sea does in the Gulf Stream, mainly by the great ice-bearing *current of East Greenland*, which fills the sea between that coast and Iceland, and which, flowing into the Atlantic round

Cape Farewell, joins the united escape currents which have made their way through the channels of the Arctic islands, to form the ice stream of Labrador and Newfoundland.

19. The extraordinary effect of these ocean streams in modifying the climate of the lands towards which they flow, is nowhere so strikingly illustrated as in the contrast presented by the climate of the two sides of the North Atlantic in high latitudes. While on the *western* side the ice-bearing Labrador current closes the harbours of that coast, chills the atmosphere, and stunts the vegetation all along the shores of Newfoundland, carrying icebergs into the western Atlantic nearly to the latitude of Malta in the Mediterranean, the *eastern* shores of this ocean, our own islands, and the coasts of Norway, right up into the Arctic regions, are washed with warm water from the far south, which not only keeps them free of all ice, but enables the land to support a luxuriant vegetation. That this water has actually come from far southern latitudes is shown not only by its temperature but by its casting ashore on our coasts, or even on those of Norway, strange nuts and seeds or pieces of wood from tropical America or the West Indies. One might bathe off the North Cape of Norway, in 71° north latitude, in water of the same temperature as that in the harbour of New York, on the opposite side of the Atlantic, in lat. 40° .

20. The two sides of the North Pacific present the same contrast, from the same cause. There the shores of the Sea of Okhotsk are frozen over from November till April, and all its harbours are closed. The western shores of America, in the same latitude, towards which the south-west drift of the North Pacific carries warm water, are always freely open to navigation. It is through the agency of the winds, however, that the warmth thus carried by the ocean streams to high latitudes, or the chilly air from over the ice-pack which they bring southward, is carried on and distributed over the land to modify its climate. Here in England we know well the difference between a warm south-west and a chilly north-west wind; the one has come to us over the warm waters of the Atlantic; the other may have passed over the broad ice stream that comes down along the East Greenland coast.

21. As the currents are, in the main, dependent on the winds, it is not surprising to find, on comparing the chart of the prevailing winds with that of the ocean currents, that there is a very close agreement between them in direction and form. The winds, however, are not restricted as the ocean streams are, and so are able to carry their temperature onward over the land.

22. Hitherto we have been dealing with those modifications of climate which result from causes which raise or decrease the tem-

perature that would result from exposure to a certain quantity of sunlight. But heat and cold are not the only circumstances which go to form climate ; moisture, and the absence of it, dryness, have quite as important an influence in determining its character. Let us see, then, in what manner moisture is broadly distributed over the land of the globe.

23. Evaporation, as may be readily understood, though it proceeds continually from water in whatever form it may occur, even in its solid state of ice and snow, is greatest where the sun's heat is most strongly felt, in tropical regions. In the belt of calms which lies between the two great converging air-currents of the trade winds, over the ocean in the equatorial zone, the sun generally rises in a clear sky ; but about midday, when its rays have gained their full strength, the heated air from the surface of the sea ascending carries up with it great quantities of vapour, and the sky is soon covered with black clouds, from which prodigious quantities of rain descend ; towards evening the sky again clears. A great part of the vapour thus drawn from the equatorial ocean falls back again in torrents to its surface, but a very large part is also carried on with the great trade-wind currents to the westward, to be expended ultimately in copious showers on the land which lies across the path of the broad current.

24. If we look at the chart of the winds, it will be seen that the north-east and south-east trade-winds of the Atlantic converge towards the American coasts between the Gulf of Mexico and Brazil. To the whole of the eastward slope of this region of the New World, from the Atlantic shores upward to the crests of the Andes, the trade winds carry the moisture they have gathered from the ocean, distilling it in the heavy showers which flood the vast rivers, the Amazon and Orinoco. From the great caldron of the Indian Ocean the south-east trade wind continually carries a supply of moisture towards equatorial Africa ; the north-east monsoon aids it in this work for half the year, but during the other half turns to blow towards Asia, and travels laden with vapour till intercepted by the heights of India, giving to that region its season of heavy rains. The islands of the East Indian Archipelago, lying also across the path of the trade and the monsoon winds, are among the wettest regions of the earth.

25. Before going farther, it is necessary to understand one of the main conditions upon which the distribution of moisture by the winds depends. If a current of air is advancing from a cooler to a warmer zone, and if no other circumstance intervenes, its power of absorbing and retaining moisture will increase as it advances to warmer latitudes and becomes itself warmed. If, on the other

hand, the direction of the current is from warm to colder latitudes, its power of holding moisture is decreasing as it advances and becomes cooled. We have already noticed, however, that an increase of elevation above the earth's surface brings about a change of temperature which is equivalent to that which would be experienced in moving to a higher northern or southern zone; so that a current of air forced upward by any means to a higher level, will lose its power of retaining moisture just in the same way as if it had been carried to a colder latitude.

26. This enables us to understand how it is that the trade winds, blowing from cooler to warmer regions, lose the power of retaining the moisture they have gathered from the sea as soon as they are forced upward to higher levels by the intervening land. Over the ocean these winds, advancing to warmer latitudes at a uniform level, and increasing in temperature as they advance, appear uniformly as dry winds. In the Atlantic, for example, the islet of St. Helena, lying in the path of the south-east trade wind, and being of such inconsiderable size as to effect no disturbance in the current of the stream of air which passes it, has only about five inches of rain in the year. The Cape de Verd islets, in the path of the north-east trade wind of this ocean, are also parched and dry. If we follow the broad paths of each of the trade-wind currents still farther back, to where they seem to come out of the land, we cannot fail to notice that every one of the regions from which they spring is barren and desert. Tracing the path of the north-east trade wind of the Atlantic eastward, we come to the great desert of the Sahara; the south-east current of the Atlantic, in like manner, seems to spring from the arid deserts of the Kalahara and of the south-west African coast. The north-east trade wind of the Pacific leaves the dry deserts of the western United States and of Lower California behind it; its south-east wind comes from the coast deserts of Peru, and Bolivia and Chile. If we follow the south-east trade wind of the Indian Ocean, we again reach a most arid region, that of central and western Australia. If we ask why all the driest regions of the land in each hemisphere should be those which lie in the areas of the original indraught to the trade winds, the answer evidently is this: they are thus dry and barren, because the air which passes over them has been drawn in each case from long distances overland, and is moving from colder to warmer latitudes, so that it passes by not only uncondensed in rain, but with an increasing tendency to promote evaporation, and to take up moisture from every water-surface over which it may blow. The influence of the horizontal extent of the land in determining its climate is here made apparent, for where this is greatest—as in Asia,

Africa, and Australia—the dry regions are widest; in America, where the width from sea to sea is much less, the dry regions are comparatively narrow and insignificant.

27. Thus we see that the greatest of the atmospheric currents, the trade winds, at the originating points of their paths, are the cause of drought and barrenness, but that where they cross land at the termination of their course in the equatorial zone they give the most copious rain supplies. This contrast may be made more striking if it is observed that in some parts of the Maroccan Sahara, near what may be called the head of the north-east trade wind of the Atlantic, not a shower is experienced for, it may be, twenty years at a time; but where this same wind reaches the coasts of South America, it brings a rainfall that represents a depth of twenty feet of water in the year.

28. The other great prevailing currents of the atmosphere, the westerly winds of the temperate regions, unlike the trade winds, blow from warmer to colder latitudes, so that the vapour they carry tends to become condensed as they advance, and they readily part with it in heavy rain showers whenever an opposing coast raises the stream to a higher level. To these south-westerly winds from the Atlantic the British Isles and all western Europe owe their moisture supply, as the similar winds from the Pacific bring the rain to the coasts of north-western America, and from the southern ocean to the slopes of Chile and New Zealand.

29. These great atmospheric currents, modified in many ways both by local circumstances and by seasonal changes, thus regulate the broader features of the distribution of moisture over the land. One of the most important of the minor conditions that guide the distribution of moisture is that of the relief of the land. Whenever any height intercepts the movement of a current of moist air from the ocean, the obstructing slope, wedging the air up into the cooler strata of the atmosphere, condenses the moisture into cloud and then into rain, which descends upon the outer slope, thereby diminishing the supply of the lands that lie behind this barrier. We need not go farther than our own islands for a good example of this. The



Fig. 80.

mountain districts of the west coast of Britain, of Wales, or Cumberland, or of Scotland, facing the prevailing south-west winds from the Atlantic (Fig. 30), have in some places ten times as much rainfall every year as the opposite or leeward coasts; in some years upwards

of 200 *inches of rain*¹ fall in some valleys of the Cumberland mountains in England, while the average annual rainfall of the east coasts on the opposite side is not more than 20 inches.

30. It may be safely said that *every* considerable mountain range or plateau has a wetter side and a drier one, or shows this contrast in a greater or less degree. An extreme example is presented by the lofty chain of the Andes in the trade-wind region, that side which faces the Atlantic winds having a rainfall that fills the great tributaries of the Amazon, while the opposite or leeward coast is so completely screened by the great barrier as to receive scarcely a drop of rain from year to year. This may also serve as an illustration of the influence of the rotation of the earth from east to west upon the climate of different regions of its surface. If we suppose the earth to have been set in rotation in the opposite direction, on the same axis, the direction of the trade winds would have been the reverse of their present curve, or they would have appeared as north-west and south-west winds. On the supposition of such a change, the trade winds of the Pacific would have poured their rain supplies on the steep *western* slope of the Andes, and all the humid forest basin of the Amazon would have been a bare riverless steppe.

31. All the great plateau lands of the globe, indeed, but more especially those which are walled in by two mountain buttresses, a maritime and an inland one, are characterised by deficiency of moisture supply. Such are the high bare plateaus of Bolivia and Peru between the Cordilleras of the Andes, called the *Punas*, and the "great basin" of the western United States lying between the Rocky Mountains and the Sierra Nevada, where the Salt Lake of Utah and the dry deserts of Colorado are found. The great central plateau of Asia, with the bare region of Mongolia and the Gobi desert, between the outer walls of the Khinghan and Altai mountains, is another example; as is also the dry plateau of Khorassan in Persia, enclosed between the mountains of Karman and the Elburz range.

32. Intermediate between those regions which are most bountifully supplied with rainfall through their situation with respect to moisture-bearing winds, and those in which deficiency of rain is observed, either through their position in relation to a current of air which passes over them from colder to warmer latitudes, or through their being screened from rain-bearing winds by mountain barriers, lie intermediate belts in which the supply of rain graduates from one extreme to the other. Excepting along the lines of some of the higher mountain ranges, there is nowhere any abrupt transition from a very moist to a very dry region.

¹ Meaning an amount that would cover the ground to a depth of 200 inches if the whole of it were collected for a year.

33. We have thus followed the chief links of the chain of conditions that go to form *climate*: we have seen that exposure to the more direct or more oblique incidence of the sun's rays resulting from latitude is not always the most influential element; that its effects are modified both in temperature and in moisture-supply by the relief of the land, by the maritime or continental situation of its different parts, and by the prevailing winds and the ocean currents which are driven by them, both of these being dependent in direction upon the rotation of the earth itself.

34. In reviewing and grouping together the broad features that characterise the landscape of different regions of the earth's surface, we find that these correspond precisely to the changes and gradations of heat and cold, moisture and drought; the more closely we study them, the more convinced do we become of their complete dependence upon climate in its widest sense. We now understand, for example, that it is not owing to any peculiarity of the soil that the Sahara region is a desert, and the Amazon basin a land of luxuriant forest growth, but mainly that the one is a region of extreme drought, the other of great moisture, both having a high average temperature; for we find the same conditions at the extremities of each of the divisions of the great trade-wind currents. In our own island, the same rock which weathers into the fertile soil of the Channel Islands gives the comparatively barren ground of some parts of the Highlands of Scotland; the rich pastures of Hereford, and some of the infertile moors of North Britain, lie on the same old red sandstone. To take another instance; the high Viti islands are clothed on that side which faces the trade wind of the Pacific with a luxuriant mantle of huge tree-ferns and creepers, while the leeward side displays only a grassy country. We cannot suppose this to be due to any difference of soil on the two sides of the island, but simply to the fact that one side is supplied with constant moisture from the ocean, while the other is deprived of this by the intervening height of the land, especially when we find the same appearance repeated not only on every ocean island but on every hill and mountain range of the land that is similarly situated with respect to a moisture-bearing stream of air.

35. The limits of the appearance of forest, of prairie or steppe, of desert "tundra" and snowfield, whether in latitude or in vertical elevation above the sea level, may thus be taken as marking in the most distinct way the true natural boundaries of the various climates of the land, and the great natural provinces of the globe.

As all animals live either on other animals or on vegetable food, it is evident that their distribution depends primarily upon that of climate. The herbivorous are restricted to the more limited regions correspond-

ing to the different zones of vegetation ; the carnivorous remain within hunting distance of those animals on which they prey.

It is, however, to the limiting effects of climate upon the distribution of man himself that we wish to direct attention here. In the first place, it is evident that man in his natural state cannot live where the land and sea are bound up so constantly in the grasp of frost that he cannot obtain food by hunting or fishing. The Eskimo of the Arctic region cannot range north farther than those latitudes in which the seal, their all in all, is sufficiently abundant, and all the Antarctic region capped by heavy ice is uninhabited by man. The great deserts of the world equally forbid almost any permanent settlement by man, and in crossing them the traveller makes what speed he can away from their barren sands. Thus the first paths of each of the trade-wind belts lie over almost uninhabited ground. It might be supposed that man would attain his greatest powers where vegetation and the lower forms of animal life attain their greatest luxuriance of growth, or in those equatorial regions in which heat and moisture are combined in greatest degree. But, on the contrary, if we look along the belt of equatorial forest, we find it everywhere to this day inhabited by savages the most barbarous. The selvas of the Amazon basin have their numberless tribes of uncivilised Indians ; the African equatorial forests their cannibal negro tribes ; Borneo and Papua the naked and wild negritos in the deep solitude of their forests. If we look back at the history of the world as far as we know it, there is not the least sign of any spark of enlightenment, or of a thought much higher than the instincts of the lower animals, ever having been fostered within the hot and humid climate of these equatorial forests. Even when transferred thither from other regions, the energies and powers of man seem to fail beneath the tropical sun.

36. It is in the temperate regions of the Old World that the germs of religious thought, of art and government, and wide intercourse, have taken root and flourish, and thence too all the power that rules the world has spread out. It is in these middle latitudes alone that human energy seems capable of attaining its highest development. The history of progress in the American continent since its discovery by Europeans affords the best illustration of this. If we look for those portions of America which are now farthest advanced in every respect, most populous and most prosperous, we find them, not in the equatorial region which was earliest discovered and settled from Europe, but in the temperate latitudes, the United States in the northern, and the province of the La Plata basin in the southern continent. Approaching the equatorial zone from either of these two regions, we come to States such as Bolivia. Peru, Ecuador,

Venezuela, which lie indolent and half civilised, their natural wealth undeveloped, their government in the hands of half-castes. The tropical island of Hayti, where Columbus planted the first European settlement of the New World, is now a debased negro republic, the Africans having expelled the white men who brought them thither.

37. The natural condition of men inhabiting the forest regions of the globe is that of hunters and trappers, and these pursuits are characteristic of the sombre forests of Hudson's Bay territory and of Siberia at the present day. Pastoral countries, on the other hand, generally present a small nomadic population, like that of the herdsmen of the Russian steppes, the cattle-driving "gauchos" of the Argentine pampas, or the Arabs with their droves of camels. It is between these extremes, in the belts which lie along the borders of the forests, that the agricultural districts of the world are found—districts in which men have first collected together in fixed habitations, gradually forming villages, and towns, and cities, acting together for common purposes and becoming civilised.¹ From these points inroads have been gradually made into the forests, for their climate and vegetable soil is also well adapted for agriculture, until, as in Europe or the eastern United States, the larger proportion of the land has been cleared of its natural wood and parcelled out into hedged fields. The most densely inhabited portions of the Old World, the great plain of China, the alluvial valley of the Ganges, the plain of Lombardy, and the lowlands of Belgium, are those which have the greatest agricultural capabilities.

38. The general distribution and condition of the human race are thus determined mainly by climate and by the characteristic landscapes which have resulted from its variations.

39. Subject to this main controlling element, the local arrangement and accumulation of population seems to have been to a large extent determined, especially in the later historical periods, by another independent cause—the presence of mineral wealth. It was the wealth of Tarshish in silver, lead, and iron, that drew the Phœnicians through the Straits of Gibraltar, and the tin of Cornwall that brought their ships to Britain; the search after "El Dorado" caused the Spaniards to overrun all the South American continent and Mexico; California owed its population, in the first place, to its gold, just as the gold of Victoria in Australia has raised it above the older parent colony of New South Wales; and as the discovery of diamonds drew thousands to settle even in the arid plains of Griqualand in South Africa.

With the more extended use of machinery driven by steam,

¹ *Lat. civis*, a citizen.

in place of manual labour, coal and iron have wielded the greatest influence in determining the local concentrations of people. The manufacturing districts of our own island, the "Black country," lying over the iron and coal fields, is its most densely peopled area, the workshop of the world. A dense population has in like manner gathered over the iron and coal fields of Pennsylvania, in the United States. Commerce, dependent on the variety of productions of different lands and the exchange of surplus products or manufactures, is regulated in the paths which it follows by physical causes, and brings men to the natural inlets of every country, the estuaries of the river highways. In the ports, the business of the world is carried on, the products of the interior are stored for export, and those of foreign lands for distribution inward; hence many of the great cities of the world have grown up round their seaports.

V. PEOPLES OF THE WORLD: NATURAL, RELIGIOUS, AND POLITICAL SYSTEMS.

1. It is important to remember that the population of the world, now estimated at not far short of 1500 millions, is by no means a constant number; that it has been increasing steadily and rapidly throughout all historical ages. The United States of America, for example, have amassed their forty or fifty millions of inhabitants, foreign to the soil, in less than a century, and Australia has been peopled within far less time. If the present average rate of increase of numbers continues, it has been calculated that the population of Europe will be three times as dense in the year 2000 as it is in the present year. The rate of increase in different parts of Europe is, however, very various; some states, such as Great Britain, are rushing upwards in numbers; while others, such as Portugal, appear to have arrived at a point, from which the population neither advances nor decreases.

2. It has been well remarked that countries which possess the most varied physical features, and which, in consequence, have the greatest variety of climate and landscape, giving the greatest range of character and occupation to their inhabitants, have produced the most highly-developed races, who have borne and continue to bear rule upon earth. Such countries are Persia, Greece, Italy, Spain, and in a far higher degree our own British Isles.

3. Throughout the many classifications of the varieties of the human family in the different schools of ethnology,¹ there is a general agreement in recognising the peoples of the most highly-developed nations of the world, which extend from India across

¹ *Ethnos*, race; *logos*, discourse.

Europe, as belonging for the most part to one race. This is called the Aryan or Indo-European family of nations, the first name being preserved in the modern native name of Persia, Airan or Iran. Somewhere in central Asia the mother nation of the Indo-European race had its primitive seat, while Europe, before the dawn of history, was perhaps inhabited by tribes allied to the Finns or the Indians of America. From this Asiatic centre successive migrations seem to have taken place outward to north-west, the first swarm having been the Celts, who at one time appear to have occupied a great part of Europe; later, along the Mediterranean shores, came the ancestors of the Greeks, and of the Italians, and of the Teutonic peoples; while a more northerly stream is thought to have taken its way round the Caspian to form the Slavonic nations. Subsequently migrants seem to have poured out in the opposite direction towards the plains of India, where the Aryans became the dominant race of the fertile Ganges valley, those remaining at home becoming the great Medes and Persians of history. Increasing ever in civilisation and intellectual power from age to age, this race has become the dominant one in the world, extending its influence to every part of the earth, supplanting many inferior races, and re-peopling wide areas, as in America and Australia.

4. Another great branch of the human family in the Old World is known as the *Mongolian*, corresponding very closely with that called Turanian by some writers. The Persians from the earliest times called the land lying to the north of them Turan, a name which is still used synonymously with that of Turkestan in central Asia. This race may be said to occupy now almost all the mainland of Asia that is not inhabited by Aryan nations. Though an offshoot from this family seems to have founded an empire in China, and to have attained there a high state of civilisation before any nation had risen to an equal stage of advancement on the shores of the Mediterranean, the western nations have long since passed the Mongolians, whose influence has been chiefly confined to the one continent. They figure continually, however, in the history of this part of the earth, as the Scythians of Greek geography; the Huns, who carried desolation westward; or the Tatars, who spread their conquests over all the wide region from Russia to the plains of India.

5. Two other families of Asiatic origin have, however, extended their area south-westwards into Africa. These are called the *Hamites*, who have peopled Egypt, Libya, and Numidia, from the earliest beginnings of history, inventing on the borders of the Nile the hieroglyphic literature and the arts in which Egypt excelled; and their successors from south-western Asia, the *Semites*, or Syro-

Arabians, who had founded the splendid cities of Nineveh and Babylon by the rivers of Mesopotamia. To the Canaanitic branch of this family belonged the Phœnicians, whose colonists on the African coast, the Carthaginians, appear to have been absorbed, like the Romans and Vandals who followed them, by the numbers of the Hamitic Numidians who were there when they came ; or by another branch of the Semites, the Arabs, who followed after them, and who extended their rule not only to that part of Africa but to almost all the Sudan, carrying Mohammedanism with them to Wadai and Bornu in the Chad basin, and over the Somal country southward along the east coast to beyond Zanzibar and Sofala.

6. This brings us to the indigenous families of Africa, the *Negroes* proper, who occupy the whole of the central portion of the vast continent in enormous numbers, of diverse tribes, from the Atlantic about Cape Verd to Khartum on the Nile, and southward to the Congo ; and the family which has been named *Bantu*,¹ speaking a language which differs essentially from any negro tongue, covering fully a third of the continent on the south, from the Gulf of Guinea, the Congo, and the great Nile lakes, southward to Cape Colony.

7. Compressed into the south-west corner of the continent we find the remains of another distinct family, that of the yellow *Hottentots*, possessing a language which is radically distinct from any other known form of speech.

8. In the islands and peninsulas of south-eastern Asia appears another family, regarded by some students as a distinct race, by others as a branch of the Mongolian. This includes the Malays of Malacca, Sumatra, Java, the Moluccas and Philipppins ; the Polynesians of the multitude of the Pacific islets ; and the Hovas, or ruling race of the people of the island of Madagascar. This branch is therefore scattered over an exceedingly wide area.

9. As another group or family, the aboriginal Indians of North and South America are classed together as the "copper-red" race of men, though it seems very questionable whether we have here to do with one original stock or with people of separate centres of origin. In the northern half of America, these aboriginal peoples, as we have seen, have been so supplanted by the tide of emigrants from Europe and their African slaves that only small remnants of their original tribes remain. In South America, on the other hand, they still hold all the central regions of the land, and on its maritime borders have to a great extent become combined with the settlers from Europe and the Africans introduced by them.

¹ *Bantu*=men, on the west coast known as *Bunda*=kindred. The best known branch of this family is that of the "Kafirs" (from the Arab *Kāfir*=infidel, or, as we would say, heathen) of the Cape Colony.

10. From the aborigines of America must be separated the *Eskimo*, the strange inhabitants of the borders of the polar seas—a people of North Asiatic origin, who probably crossed by the natural bridge or rather stepping-stones afforded by the Aleutian Islands.

11. Lowest of all in the scale of humanity stand the *Papuas* or *Negritos*¹ of some parts of New Guinea and the interior forests of some of the Sunda Islands, with the allied aborigines of Australia, now rapidly disappearing from that continent before the advance of the European settlers. Their features, the retreating forehead, woolly hair, flat nose, and thick lips, in many cases surprisingly recall the African blacks. Those in Australia are the most abject of all beings in the likeness of men—without history or tradition, perpetual wanderers, never tilling the ground, destitute of all means of bodily comfort, and apparently incapable of permanent improvement.

12. The following is an estimate of the numbers of men included in each of the great divisions above enumerated, excepting the last, for it seems impossible in the present state of our knowledge to arrive at even a guess of the numbers of the Papuan branch of the human family ; it is, however, at the present time certainly the smallest of all :—

Indo-Germanic or Aryan race . . .	550,000,000
Mongolian or Turanian . . .	635,000,000
Semitic and Hamitic . . .	65,000,000
Negro and Bantu . . .	150,000,000
Hottentot and Bushmen . . .	150,000
Malay and Polynesian . . .	35,000,000
American Indian . . .	15,000,000

13. Second to distinctions of race and language in marking out at once the broad divisions and bonds of union among mankind, come the differences of religious belief. There are everywhere in the world traces of order, plan, and design, as in the circuit of the seasons, the alternations of light and darkness, the ebb and flow of the tide, so that the idea of a Being who controls and guides all things is more or less definitely expressed in almost every language. Among the savage tribes in which the reasoning powers have not been developed, two principles are first recognised as striving for the mastery, a creative and a destructive, a good and an evil agency—the one, it may be, sending sunshine and showers which promote verdure and abundance, the other sending excessive cold or scorching heat, and denying the fertilising rain. Hence their efforts are directed rather to propitiate and pacify the evil than to worship the

¹ Spanish diminutive of *Negroes*.

good. The whole belief of the West African negro, for example, is in evil spirits and in "fetishes"¹ to counteract their evil influences; and the adoration of the Hindu is mainly divided between Siva, "the destroyer," and Vishnu, "the preserver." With the increase of intelligence and reasoning power, however, comes the conception of a supreme being; culminating in the belief in one living and true God, infinite in power and wisdom and goodness, the Creator and Preserver of all things.

14. Here then we have the broadest distinctions of religion—the *polytheism*, or belief in many powers of good and evil, of the heathen, and the *monotheism*, or belief in one God, of all the more civilised peoples of the world.

To the former belong the superstitions of the aboriginal Indians of America, of the natives of Africa, and of the islands of the Pacific: a higher stage is reached in worship of the gods of the Hindus, and from that we pass to the religion of Buddha, professed by perhaps a third of all the multitude of human beings in the world. Though originating in India about 2500 years ago, this religion has now little hold in the peninsula, but bears full sway in Ceylon, and prevails over the continent of the Old World from Lapland and the far north of Siberia through Tibet and Mongolia, over China, Japan, Burma, and Siam, to the farther Indian peninsulas and the East India Islands; its area thus corresponds in great part with the limits of the Mongolian race. Buddhism has lost much of its original purity, and its temples are now filled with images of the spirits of the woods and the valleys; but it is characteristic of this widest-spread of all faiths, breathing as it does a spirit of universal charity, that force has never been employed in its propagation, rarely even to resist aggression. In China, Buddhism divides adherence with the Confucian system of philosophy, which contains scarcely a trace of a personal god, and with that founded by Laou-tze, a contemporary of Confucius: the followers of the latter philosopher being known as the Taou or "sect of reason."

15. The belief in one God was the chief distinguishing peculiarity of the descendants of the patriarch Abraham, the Jews who migrated from Mesopotamia about 2000 B.C. to Canaan or Palestine; their religion under a new dispensation is Christianity, which has taken deepest root in the most highly developed branch of the human race, the Aryan or Indo-Germanic, and its offshoots in all parts of the world. Latest of all the creeds which have taken hold of the minds of large sections of the human race comes Islam, the religion founded by Mohammed, but based mainly on the Jewish faith, which burst out like a volcano from Arabia about 600 years

¹ Portuguese *feitico* = magic.

after Christianity had begun to spread. Obeying its injunction (which is now all but a dead letter) of making war upon all infidels, the followers of Mohammed spread their conquests and their faith all across North Africa, far into the Sudan, down the coasts of the Red Sea into India and the archipelago beyond, as well as far into central Asia and (with the Turks) into south-eastern Europe. In most of these regions Mohammedanism still prevails.

16. In point of religions the numbers of the inhabitants of the world may be approximately divided as follows :—

Christians		375,000,000
Jews		7,000,000
Mohammedans		170,000,000
Buddhists		503,000,000
Hindus		177,000,000
Heathen and fetish worshippers		170,000,000
Various and unknown		48,000,000

17. The influence which religious belief has exercised in determining the events of history, and which it holds over the political systems of all nations of the world, need scarcely be pointed out. It may suffice to recall the fierce wars by which Mohammedanism was spread over a large area of the globe, the reaction of Christendom in the crusades, the struggles of the Reformation in Europe, or in the present day the great conflict begun by Russia ostensibly for the emancipation of the Christian Bulgarians from their Mohammedan oppressors the Turks.

18. Among the perfectly barbarous peoples of the earth, who are generally wanderers over a vast tract of thinly-peopled country, there is rarely found any approach to organisation or union; each tribe indeed may hold together under one head or *patriarch*,¹ or under a chief chosen for his prowess, but these separate tribes are most frequently hostile to one another.

Wherever, from the character and products of the country, the population has become denser and more settled in habits, a more united condition begins to appear, even if it is not accompanied by any approach to higher culture. Examples of this are afforded by the kingdoms of Central Africa (Ruia, Uganda, etc.), the inhabitants of which, though remaining in almost the lowest stage of barbarism, are united under hereditary and absolute rulers, who, through subordinate chiefs, hold sway over territories as large as those of European kingdoms. The extreme contrast to the condition of savage communities, in which each member or family shifts for itself, is reached in the orderly association of highly-civilised peoples for intercourse, government, and mutual protection.

¹ *Gr. patriarché*, the head of a tribe.

19. The highest in rank and importance of such associations of men are those which are termed *Empires*; such are governed by an emperor, a name taken from the Roman "imperator," the general of an army, which had at first a military signification, but the meaning of which has now become very various. The name is used in some cases to express the agglomeration of many states under one crown, as in the case of the British Empire meaning the whole of the British possessions in all parts of the world, as distinguished from any one portion. Countries ruled over by a king or queen (Saxon *cynig*; Sanskrit *ganaka*, father), or *kingdoms*, are generally placed next to empires, but there is practically no such sequence. From its derivation the office of king seems to have grown out of that of the patriarch, the king having originally had a similar rule to that of the father of a family. The term *monarchy* (Greek *monos arkhos*, sole ruler) is applied equally to empires and kingdoms where the supreme power is concentrated in one individual.

20. If all three great powers of government—the legislative, the executive, and the judicial—are centred in one person, and exercised unrestrainedly by him, the monarchy becomes a *despotism*. Such a condition can only be permanent among savage peoples; by culture men become conscious of their rights. Military despotism has from time to time been extended over great territories, but in almost every instance, as in that of the great kingdom of Genghiz Khan, or in that of Napoleon, the power has crumbled away immediately on the death or downfall of the one man whose will upheld it.

21. When the head of the state, still maintaining the dignity of royalty, shares the supreme power with a class of nobles, with a body of popular representatives, or with both, the government is termed a *Limited Monarchy*. Here the sovereign represents the will, the executive; the aristocracy, the mind of the deliberative assembly; the representatives of the people, the suggestive element. When the first is predominant, in proportion to this predominance the monarchy approaches a despotism; where the second element preponderates, an *Oligarchy*¹ arises; where the third is in power, a *Democracy*.²

22. A *Republic*³ implies a government dependent upon the will of part or whole of the people, and is thus properly a democratic form of government; but, according to the constitution of the governing body, a republic may vary from being the most exclusive oligarchy to a pure democracy.

We shall afterwards notice that in different countries and among

¹ Greek, *oligos arkhai*, the rule of few. ² Greek, *demas*, the people; *kratos*, to rule.

³ Lat. *Res publica*, commonwealth, public good.

different races these forms of government vary between each of these extremes.

A *State*¹ is any country having supreme authority within itself, but the name is generally applied to smaller political bodies which are united together for mutual advantage within an empire, as in the States of the German Empire, or as in a republic of the United States of America. The *States* or *Estates* is the name given to the classes of population in a country, directly, or by their representatives, taking part in its government, as in the phrase "the estates of the realm."

23. The name *Colony*² is applied to embrace various classes of territories in foreign lands, either directly dependent or subordinate to a parent state, from which they have been peopled, the name having been adopted from the fact that the first inhabitants of a colony have generally been agriculturists. The Australian and North American possessions of Britain are colonies in the true sense. All dependencies of a state are not, however, colonies. Such possessions as Gibraltar, at the gate of the Mediterranean, and Perim Island, at the entrance to the Red Sea, are mere fortresses upheld for protective purposes; the garrison residing in them being maintained and paid by the State. India, again, which affords profitable residence to the British who live there as the rulers of the native races, is in no sense a colony.

24. In passing on to consider more in detail the many political divisions, empires, kingdoms, and states of the world, as they appear at the present day, we shall have first to consider their limits or *boundaries*. Here we shall find that, subject to the extent of the land, and its natural limits towards the ocean, the interior frontiers of every state have been determined by the combination of a number of circumstances, such as the climate and character of the land, the history of the people who occupy it, the race of men they belong to, their language, or their religious belief. In some cases, as a natural limit, a mountain range or a broad river forms part of the frontier, but in quite as many instances this has been decided by other circumstances, or has been drawn arbitrarily, without regard either to natural features, to race, language, or creed. The artificial frontiers thus laid down have, in most cases, the great disadvantage of necessitating the maintenance of barriers both against armed aggression from neighbouring states, and for the protection of legitimate from contraband trade. Hence a maritime state has many advantages over one the boundaries of which lie wholly inland; its seaboard, if it possesses available harbours, opens the way for commerce with far distant lands. Our own country, doubtless,

¹ *Lat. status*, a condition.

² *Lat. colonus*, a husbandman.

owes its political as well as its commercial importance in a great degree to its situation, open to the sea on all sides. The disadvantages attending the deficiency of permanent natural outlet by the sea are illustrated in the gigantic empire of Russia, which, ever since it became a maritime state under Peter the Great, has been striving to add to its seaboard in a southerly direction, to escape from the blockade of the ice which annually closes all its northern European and Asiatic coasts, as well as the harbours of the Baltic and the Black Sea.

25. Within the limit of each state, in order to arrive at a clear conception of its political value in the world, we shall have to consider its relief, and the character impressed on it by climate, as far as these circumstances react upon the condition and occupation of its inhabitants; its productions, whether of the vegetable, animal, or mineral kingdoms; its manufactures, affording the means of profitable exchange with other countries; its inhabitants themselves, and their relation to the peoples of neighbouring lands in race and creed, their distribution over the land, whether in cities, or as peasants or nomads; and, lastly, the form of government under which they live, representing, as this does in many cases, the outcome of many experimental trials, struggles, and experiences in the past, and, in some degree, the final choice and intention of the nation itself. This will have been made more clear by the previous chapters, in which the leading points of the history of each state have been sketched. We shall now come back to them as to old friends, of whom we have known something from their birth upwards.

EUROPE.¹

1. **ALTHOUGH** Europe—from its historical and actual importance—has always been regarded as one of the great divisions of the earth's surface, it is not a separate and independent mass, but a great peninsula of the continent of Europe and Asia (sometimes called *Eurasia*) reaching westward with many limbs between the Arctic Sea on the north, the Atlantic on the west, and the Mediterranean on the south. On the side of Asia, the crests of the Ural mountains and of the Caucasus are generally recognised as the natural limits of Europe, though these do not correspond to its political boundaries in this direction.

2. **Extent.**—The area of Europe measures about 3,800,000 square miles; but as these figures convey no definite impression in themselves, it may be noted that its extent is about a third of that of Africa, a fourth of that of America, and somewhat more than a fifth of that of Asia, or that it comprises about a fourteenth part of the known land of the globe.

The greatest distance between its extreme north and south points—the North Cape of Norway and Cape Matapan in Greece—is about 2400 miles; and from east to west—from Cape La Roca, or the “Rock of Lisbon,” to Cape Apscheron, the eastern extremity of the Caucasus range, on the Caspian—about 3000 miles.

3. The most striking feature of its outline is that of its great irregularity, the deep inlets and gulfs of the ocean which penetrate its mass, and the peninsulas which run out from it.

Gulfs and Inlets.—On the north the *White Sea*, so called from the ice and snow which bind it up for more than half the year, reaches in from the Arctic Ocean. From the Atlantic, the shallow *North Sea*, or German Ocean, and the *English Channel* (called *La Manche*, or “The Sleeve,” by the French) break in to separate the British Isles from the mainland; and from the former the *Skager Rack*, “the crooked and boisterous strait,” leads through the *Kattegat*, the “Cat’s Throat” (also called “The Sleeve,” by English seamen),

¹ The name Europe appears to have come into use among the Greeks between the times of Homer and Herodotus, and seems to have been first employed to distinguish between the land of the Hellenes and the Peloponnesus and islands. Carl Ritter derives it from *Apru*, the name given by the Scythians, according to Herodotus, to the flat steppe lands west of the Caspian, contrasting with the high lands of Asia.

and the "Belts" of the Danish islands, to the *Baltic*,¹ or the "East Sea" of the Germans, and its continuations, the Gulfs of Bothnia, Finland, and Riga.

Farther southward, the stormy *Bay of Biscay*, named from the Basque province of Vizcaya, sweeps in along the northern coast of Spain, and beyond the Peninsula the narrow *Strait of Gibraltar* lead into the great *Mediterranean* (*medius*, middle; *terra*, land), which stretches eastward for 2300 miles. Among the many branches of this great basin are the *Gallic Sea*, running north towards Gaul, between Spain and the islands of Sardinia and Corsica, forming the stormy Gulf of the Lion and that of Genoa; the *Tyrrhenian Sea*, between Sardinia and Italy; the *Ionian Sea* and the *Adriatic* running north from it, between Italy and the Balkan peninsula, towards the ancient seaport of Adria, perhaps the oldest in Europe, in the delta land of the rivers Po and Adige, now separated by the sea to which it gave its name by a stretch of ten miles of alluvial land formed by the action of the rivers. Beyond Greece, the island-studded *Ægean* leads north to the narrow inlet of the *Dardanelles*,² opening into the little Sea of Marmora, named from its marble-yielding islands, and from that by the *Bosporus* or Ox ford (the canal of Constantinople), into the second great Mediterranean basin, the *Black Sea* or *Euxine*,³ with its offshoot the shallow *Sea of Azov* (a town at the mouth of the Don), behind the peninsula of the Crimea, called the *Balik Dëfiz* by the Tatars from its abundance of fish. The Caspian Sea, forming part of the natural frontier between Europe and Asia, probably at one period extended as a third great Mediterranean, united to the Black Sea by a strait lying to the north of the Caucasus, where the ground between is so low that a rise of twenty feet only in the Black Sea would cause its waters to overflow into the Caspian basin. Since the separation, the waters of the Caspian have shrunk down by excess of evaporation over supply, till the level of its surface is now eighty-four feet beneath that of the other basins of the Mediterranean which are still connected with the ocean. The indented seaboard of Europe measures not less than 60,000 miles.

4. *Peninsulas*.—Between each of these branches of the sea there run out corresponding promontories and peninsulas of the mainland: these are most numerous on the south side, where we find the *Crimea*, *Turkey* and *Greece*, *Italy* and *Spain*, bordered by the islands of the Archipelago, by Sicily, Sardinia and Corsica, and the Balears. The western or Atlantic side presents the *greatest* peninsula, that of *Scandinavia*; and the most important island group, that of the British Isles. The Danish peninsula is remarkable as the only one in Europe, and indeed in almost any part of the world, that points northward; the long snow wastes of the island of Novaya Zemlya, detached portions of the chain of the Ural mountains, cut off from the mainland by a narrow strait, point in the same direction.

Iceland, Spitzbergen, and Franz-Josef Land in the Arctic Seas lie so far out from the mainland of Europe, with which they are nominally classed, as to make it doubtful whether they should be considered satellites of this or of the American continent.

¹ This name is first employed by Adam of Bremen, eleventh century, who derived it from *Baltia*, an island mentioned by Pliny, and identified probably with Zealand.

² From Dardanus, a Greek city on its shore; also called the Hellespont = the "Sea of Helle."

³ The original name, given either from the dangers of its navigation or from the savage tribes who inhabited its shores in early times, was *Æxine* = inhospitable; this was changed by the Greeks to *Euxinus* = hospitable. The Turks seem to have reverted to the old name, calling it Kara Dëfiz, the "Black Sea," perhaps from the strong N.E. winds, the fogs, and thunderstorms to which it is subject.

5. **Relief.**—The varied outline of the coasts of Europe is repeated in the diversified relief of its surface ; the main mass or body of the land next Asia lies low, but almost all the members, attached or detached, peninsular or insular, are high and mountainous.

The great lowland of Europe thus lies towards the east, embracing the vast continental area of Russia, and sending out arms westward round the Gulf of Bothnia and the Swedish side of the Baltic, and through North Germany and Denmark, to form the lowlands of Holland and Belgium and of Western France, along the shores of the Bay of Biscay, as far as the rise of the Pyrenees.

6. The vast central area of the Russian lowland has almost everywhere the same character, *woods and marshes* alternating with cultivated land, affording a superfluity of grain, which is sent down by the rivers to the seaports of the Baltic and the Black Sea ; but along its northern border, next the icy Arctic Sea, lie the moss-covered swamps called the *Tundras*, the soil of which is never thawed for more than a yard's depth ; all its southern margin towards the Black Sea and the Caspian is a treeless *steppe*, over which at some seasons the grasses shoot up above a man's height, concealing the pasturing herds. Towards the Caspian, over the area covered by that sea in former times, the *steppe* has a different aspect, the soil being so filled with salt left by the retreating sea as to support only the prickly saltwort and such saline plants.

Finland is one of the most remarkable regions of the great European plain ; its granite floor, elevated above the sea-level probably in a recent geological period, is worn into thousands of angular lake-basins, which form a perfect network over its surface ; to the sailor on the Baltic its margin presents a girdle of steep cliffs guarded by a fringe of rocky islets or skerries. The cliffy Åland Islands are detached fragments of this remarkable formation. A curious feature of the lowlands of Scandinavia is observed in the gravel ridges, called "*ösars*," which extend generally from N.N.W. to S.S.E., and are the equivalent of the "*kaims*" of Scotland.

The eastern portions of the North German plain, as far as the Oder, have the same character, the same corn-yielding clay soil, as the adjoining lowlands in Russia ; but farther west, round the capital city of Berlin, the plain becomes less fertile, in some parts sandy and bare. Beyond the Elbe, in Hanover, the *Lüneburg heath* covers a large part of the plain ; next it lie the moors, marshes, and fens of Oldenburg and the borders of Holland, where cattle and horses are the wealth of the land ; and beyond these the highly cultivated lowlands on each side of the Rhine delta, separated by the heaths (*Campine*) and moors (*Peel*) of Brabant, which run out towards the lower Scheldt like a dividing wedge between Holland and Belgium.

Passing into France, and across the broad river basins of its lowlands which open to the English Channel and the Bay of Biscay, we come upon the great wine-yielding lands, such as *Champagne* and the vineyards of the Gironde, with the corn country of Brie north-east of Paris, and of Touraine, on the Loire between these ; and lastly, at the extremity of this branch of the European plain, to the *Landes* along the coast between the mouth of the Gironde and the Pyrenees, over whose sandy heaths and marshes the natives stalk about on stilts.

Of the more isolated lowlands of Europe, two of large extent occur in the basin of the river Danube, separated by the gorge of the "*Iron Gate*," formed where the Balkan and Carpathian ranges approach most closely. The upper plain, circled about on all sides by mountains, is that of *Hungary*, over which

corn-fields interchange with pastoral steppes well stocked with horses and cattle, sheep and swine, merging in some parts into marsh lands with cranes and storks, or into dusty sand flats. Where the plain begins to rise to the sunny hills, the Hungarian grape ripens to yield its famous wines. The lower plain of the Danube, which might be called a branch of the vast Russian lowland, is that of *Romania*, with its far-stretching treeless heaths and pasture lands supporting great herds of cattle and horses, passing into wide reed swamps which characterise the delta of the Danube.

Corresponding to the Romanian plain is that of *Lombardy*, perhaps the most productive region of Europe, in which the irrigated meadows may be six times mowed in the year, and where wheat and rice, and wine and dairy produce are yielded in vast quantity.

The islands of Europe, as before remarked, are generally high; the only ones which are altogether low are those of the Danish archipelago. The only other considerable island plain is that of central Ireland, with its extensive peat bogs.

7. Highlands.—Europe presents two great highland regions; a southern, extending along the northern border of the Mediterranean from Turkey to Spain, in continuation of the chief line of the heights of Asia; and a northern, appearing in Scandinavia and Britain, separated from the former by the western branch of the great lowland that we have been noticing.

The *Alps* rise as the central mass of the southern highland region of Europe. The many groups comprised in this series of heights which curve round the plain of Lombardy arrange themselves into three generally recognised divisions:—The Western Alps, the groups lying between the Gulf of Genoa and the Little St. Bernard Pass; the Central Alps, extending from the St. Bernard to the pass named the Stilsfer Joch; and the Eastern Alps beyond this. The central mass is the highest, rising with majestic forms from deep valleys up to sharp riven peaks, high above the line of permanent snow; its wings to east and west decrease in elevation towards the Gallic Sea and the plain of the Danube on either side. All the less jagged heights are mantled in snows, from which glacier streams descend. The largest of these ice streams are the Aletsch glacier from the group of the Finsteraarhorn, and those of the frequented valley of Chamouny, descending from Mont Blanc, the monarch of the Alps (15,784 ft.)

The passes of the Alps have always had importance as the gates of traffic from North Italy to the rest of Europe; some of them, such as the two St. Bernard Passes, are under the protection of friendly monks; but railroads have now been constructed to pass the great barrier by the tunnels of Mont Cenis in the west and of St. Gotthard in the centre, by a line over the Brenner Pass from Innsbruck to Botzen, and by an eastern road over the Semmering from Vienna to Gratz.

8. Southward the Alps fall steeply to the low plain of Lombardy, but a mass of lesser highlands and plateaus extends northward from them over central Europe to the border of the plain of Northern Germany.

The first outlier of the Alps in this division is the long limestone range of the *Jura*, with its magnificent pine forests. Beyond, bordering the Rhine valley, rises the *Schwarzwald*, or Black Forest, then the *Odenwald* and the *Rhön* mountains, leading into the *Vogelsberg* and *Taunus*, and to the outlying *Harz*, the farthest north of the central European heights. Turning eastward, we reach the *Thüringerwald*, the *Fichtel Gebirge*, and the metalliferous or *Erz Gebirge*; then across the Elbe, in Saxon Switzerland, come

the *Niesen Gebirge* (the Giant Hills), and the *Sudetic Mountains*, extending to the Oder. Turning south again towards the Alps, the *Mährische Höhen* (the Moravian heights) are reached, and joining with these to close in the high valley of the Upper Elbe, the high *Böhmerwald*, the forest mountain of Bohemia. Almost all the area of South Germany, including Württemberg, Bavaria, and Bohemia, enclosed by these heights, which extend northward from the Alpine mass, is high plateau land. It is remarkable here how the name "wald," = forest, has come to be synonymous with that of mountain. The lower lands have been cleared of their natural forest growth for agricultural purposes, but the hills retain their covering.

9. Westward of these central European heights, beyond the Rhône, rises the range of the *Cevennes* in France, extending from near the Pyrenees northward through the *Forez* and *Côte d'Or* to the plateau of *Langres*, to the *Vosges* and *Hardt*, the undulating plateau of *Ardennes* covered with beech and oak wood, and the volcanic group of the *Eifel*, skirting the Rhine valley. More centrally in France, contrasting with the adjoining long range of the Cevennes, the volcanic cones and domes of *Auvergne* rise from bare lava-covered plateaus.

10. Shut off from the rest of Europe by the *Pyrenees*¹ (Pic de Néthou, Maladetta, 11,168 feet), whose high and close barrier admits easy passage only round its flanks, is the Spanish Peninsula, which, excepting in its river valleys, and along some parts of the seaboard, is a continuous highland. A number of mountain ranges, supporting broad plateaus between, traverse it from east to west. Along its northern edge the *Cantabrian* mountains prolong the high line of the Pyrenees; centrally rise the *Sierras of Guadarrama* and *Estrella*; farther south the *Sierra Morena*, and along the Mediterranean border the *Sierra Nevada* of Granada. Throughout the summer the tablelands of *Castile*, bare and treeless, are burned up by the hot sun, but through the chilly winter they are swept by violent winds. The herdsman who wears a broad-brimmed hat for protection against the excessive heat during the day, a few hours later puts on his thick warm cloak; in the same way, after the almost rainless summer, follows a cold winter with ice and snow.

11. The *Apennines* prolong the Maritime Alps, and run like a backbone through the peninsula of Italy. Cleared of its natural wood, and scorched by the southern sun, this range is generally dreary and barren in aspect, like a long wall, with few peaks or salient points to recall the magnificent forms of the Alps. The volcano of *Vesuvius*, the only active one in all the continental part of Europe, rises over the coast plain of Campania.

The lines of the eastern wing of the Alps are prolonged north-eastward across the Danube by the grand curve of the wooded *Carpathians* and *Transylvanian Alps*, circling round the plain of Hungary. South-eastward they branch into the many ranges which support between them the confused mass of highlands of Bosnia, Herzegovina, and Montenegro, of Serbia and Albania. Farther on these heights take more definite shape in the range of the *Balkan* which runs east to the Black Sea, in the mass of the *Rhodope* mountains extending south-eastward to the *Ægean* Sea, and in the *Pindus* range, which gives shape to Greece, and runs out into the Mediterranean in the peninsulas of the Morea.

12. Distinct from all the rest of the southern highlands of Europe stands the huge mass of the *Caucasus*, the natural frontier of Europe on the south-east, rising like a wall from the flat isthmus between the Black Sea and the Caspian. Its close parallel chains are united by high plateaus cut into by deep narrow transverse gorges of extreme depth. Though attaining far greater

¹ Supposed to be from the Basque word *Pyrge* = high.

heights than the Alps (Elburz, 18,572 feet ; Kasbek, 16,545 feet) and reaching several thousand feet above the limit of perennial snows, the glaciers and snow-fields of the Caucasus are small and insignificant in comparison with those of the Alps. This is owing to the dryness of the region in which they stand, and the small snowfall over them.

The hills of the Crimean peninsula, rising steeply from the Black Sea to the "yaltaş" or "alps" of the Tatar herdsmen, are evidently a western continuation of the line of heights of the Caucasus.

13. In the north European mountain region the mass of heights which forms the Scandinavian peninsula are by far the most important. These present no definite range, but are rather a collection of broad plateaus topped with moor or snow-field, cut into by long steep-walled "fjords" on the Atlantic side, and resembling the Alps in the pine woods of their slopes, in their lakes and extensive glaciers, though they are nowhere of very great altitude (Galdhöppig, Ymes Field, 8546 feet).

The name *field*, which is applied to most of the Scandinavian mountain groups, suggests their plateau form ; the *Hardanger Field*, *Ymes Field*, and *Dovre Field*, with the *Jostedal Brae* (or ice-brae=glacier), are the most prominent of the southern heights of Norway ; in the north the broken heights which run along the Atlantic and Arctic borders of the peninsula have the general name of the *Kiöllen*. The heather-covered hills of Scotland—the Grampians and west coast mountains—as well as those of Cumberland and Wales farther south in Great Britain, belong to the same system as that of the Scandinavian heights.

14. We have formerly noticed that almost all the European islands are high. In the Mediterranean we find the island of Crete reaching to upwards of 8000 feet in *Mount Ida* ; Sicily, with its volcano of *Etna* (10,866 feet) ; Sardinia, with *Mount Gennargentu* (6116 feet) ; Corsica, with *Monte Rotondo* (8607 feet) ; Iceland, on the border of the Arctic seas, recalling Norway in its grand fjords, rises high in its mass of volcanic jökulls (*Oræfa*, 6408 feet ; *Hecla*, 5115 feet), covered in between with accumulated snows and glaciers ; *Spitzbergen's* black peaks, which give its name, also rise high from its white glacier fields.

15. Separate and distinct in character and direction from the mountains of the rest of Europe, is the long chain of the *Ural*, rich in gold, platinum, iron, and copper. It takes its name probably from the Tatar word meaning "belt," which well expresses the length and continuity of this remarkable line of heights, stretching along the eastern border of the great European plain for more than 1200 miles. In height, however, the Ural is insignificant (Tölpöss-is, 5542 feet). Another separated height, that of the forest-covered Valdai hills in Western Russia, would scarcely be worthy of mention among the European highlands if it did not form the water-parting of the greatest of European rivers, the Volga.

16. **Hydrography.**—The rivers of Europe flow in part to the Atlantic and its Mediterranean branches, partly to the Arctic Sea, and partly to the Caspian, which last belongs to the "continental" system of drainage, or the area from which no rivers escape to the open ocean.

The *Volga*, the largest of European rivers, is the great feeder of this largest of inland seas. Spreading out with its many arms through the cornlands of Russia eastward to the mines of the Ural, and south through the salt-yielding plains about the Caspian, it forms the great natural highways of commerce of the vast Russian lowland, which have been extended from it by

canals to reach the White Sea, the Baltic, and the Euxine. Besides the steamers and trading vessels which regularly traverse the Caspian, a large fleet of war-ships is maintained there by Russia. Its navigation, at all times difficult, is perilous when the fierce steppe winds blow over it; its northern portion is also ice-bound in winter, so that vessels cannot enter the Volga mouths till the middle of April.

17. Four great navigable rivers—the *Don*, *Dnieper*, *Dniester*, and *Danube*, flow to the Black Sea. The last-named is the second of European rivers, and forms, with its sixty navigable tributaries, the great highway between Central Europe and the East. So important is the navigation of the Danube that it was placed in 1856 under the control of a commission appointed by the European powers. The Sulina mouth of the delta is kept navigable by two long artificial dams, and even the rapids of the rocky barrier of the "Iron Gate" have been rendered passable for vessels of considerable draught. Several thousands of vessels navigate the Danube, carrying out immense quantities of grain from the lands drained by its branches. All these large rivers of the Black Sea drainage are subject to the annual blockade of frost, though in a less degree than the Volga. Ice covers the Sea of Azov in winter, and extends round the north coast of the Euxine. The Danube itself is closed by ice in severe winters as long as from December till February.

Only three rivers of importance flow directly to the Mediterranean. These are the *Po*, which gives natural highways to the fertile plain of Lombardy; the *Rhône*, the most rapid and wild of European rivers, subject to devastating floods, and of little value for navigation above its delta; and the *Ebro*, the narrowest and shallowest of all Spanish rivers, filled with water only after the snows melt on the Pyrenees.

18. The Mediterranean, the Black Sea, and the Caspian, may be called tideless seas, and the rivers which drain to them have thus no estuary,¹ and no double current in the lunar day. Their stream is always against a vessel entering from the sea.

Coming round to the open Atlantic, however, we find that the rivers which lead directly to this greatest of maritime highways, have, besides this advantage, that of an upward flow of their waters at the river mouth twice in the day, which will bear the approaching vessels with it into the land. It is this advantage mainly that has given the river mouths of western Europe their immense importance in commerce, and that has been the means of forming on them some of the greatest cities of the world.

If we look along the Atlantic coast of Europe, we find the great city and port of Lisbon on the estuary of the *Tagus*; Oporto on that of the *Duero*; Bordeaux on that of the *Gironde*; Nantes at the head of the tideway of the *Loire*; Havre and Bordeaux on the estuary of the *Seine*; London, the greatest city and port of the world, on the estuary of the *Thames*; Rotterdam opposite it, on the estuary of the *Meuse*; Liverpool on that of the *Mersey*; Hamburg on that of the *Elbe*. None of the Atlantic rivers of the highland of the Iberian peninsula—the *Guadalquivir*, *Guadiana*, *Tagus*, or *Duero*—are of much value to commerce excepting at their mouths; the great rivers of France, the *Gironde* (with the *Garonne*), *Loire*, and *Seine* are of greater importance in navigation; most valuable of all are the *Rhine* and the *Elbe*: the former giving an uninterrupted water way up to the borders of Switzerland, the latter into the heart of Bohemia.

¹ Estuary from *æstuarium*, pertaining to the tide.

19. The drainage basin of the Baltic is characterised rather by its lakes than by large rivers; its southern affluents, the *Oder*, *Vistula*, *Niemen*, and *Düna*, are all, however, important highways of the European plain, carrying down its products in barges and rafts to the Baltic ports. The short but large channel of the *Neva*, the river of Petersburg, is important in itself, and from its navigation being joined by canals with all the great waterways of the interior of Russia. Like the Caspian, the shallow Baltic and its rivers are closed to traffic by ice all through the winter for a period of from three to five months. Charles X. of Sweden, we may remember, marched his whole army across the frozen Belt in 1658 to attack the Danes.

20. The great rivers which flow to the Arctic Sea from Europe are the *Deina* and *Pechora*. Both are navigable, the latter almost to its source, but both are held in the grasp of frost for more than half the year. It is only during the summer months that the timber, furs, and grain which are exported from Archangel can be brought to it by rafts and barges, and trading vessels from a distance can make but one hasty voyage in the year to the White Sea to avoid being caught in its icy covering.

21. The great lake region of Europe lies round the Baltic. There is the *Ladoga*, the greatest fresh-water lake of Europe, as wide across as the English Channel between Portsmouth and Cherbourg, with *Onega* and *Peipus* also in Russia; *Wetter* and *Mälär* in Sweden; besides the myriad lakes of *Finland*. The beautiful lakes of the folds of the Alps, *Geneva*, *Neuchâtel*, and *Constance*, on the north side, *Maggiore* and *Como* and *Garda* in the Italian valleys, form the only other considerable lake series of this division of the earth.

22. **Climate.**—A glance at the map shows that Europe belongs for the most part to the northern portion of the temperate zone. Its most southerly peninsulas are still 12 or 13 degrees distant from the tropical line, over which the sun becomes vertical, and its northern borders reach well into the Arctic zone, where the sun's rays are low even in summer, and where he scarcely peeps over the horizon in winter. The greater part of it also lies within the influence of the westerly winds, bringing the moisture from the ocean, and thus it belongs to the forest zone of the temperate region; only its northern margin, the "tundra" belt, being too cold for tree growth, and its southern border of steppes along the Caspian and the Black Sea being too dry to support a covering of woods.

Farthest north, where the average temperature of the year is not above the freezing point, extends the desolate country of the Tundras, where the winter darkness is lit up by the "Northern Lights," a very waste of snow for nine or ten months of the year; when the warmth of the long summer day melts this covering, then swamps, and lakes, and marshes with grey plains covered with mosses and lichens between, appear in this desolate landscape. The largest plant to be seen is a little willow, never rising more than a finger length above the ground, and hiding its stem among the protecting moss. Here the cultivation of grain being impossible, and warming food being required to resist the cold, the Arctic Samoyeds and Laplanders depend for this on the animal kingdom, on their reindeer, on the seals, and sea-birds, and on fish when the rivers are free. Next comes the *subarctic belt* of the pine-woods, extending across Scandinavia and Northern Russia, in the cultivated portions of which barley

and oats are the staple food plants, and in which cattle and sheep are the domestic animals. Then follows, across Central Europe, the zone of the deciduous¹ trees, or those which annually lose and renew their leaves; this belt includes the greater part of the many trees and shrubs of the temperate regions; in it wheat represents the cultivated grains; fine fruits, apples, pears, and peaches, ripen, and the vine begins to yield its grapes and wine. Lastly, in the south we come again to a zone in which evergreen trees, such as the cork-oak of Spain, the chestnut, the stone-pine of Italy, give character to the landscape. Here also a few palms, wanderers from warmer latitudes, begin to be seen; figs and oranges become the common fruits; maize and wheat the chief food grains; and the grape yields its sweetest and strongest wines.

23. These climatic belts arranged from north to south in latitude, with their accompanying landscapes, appear also in stages one above another, wherever the elevation of the land carries it up through corresponding climatic regions. In the extreme south, for example, we should find these stages ranged one above another from the sea-level to the point of perennial snow, thus:—

	Perennial snow.
<i>Snow-line</i>	Alpine plants, mosses and lichens.
	Pine woods.
	Deciduous trees.
	Evergreen woods.
<i>Sea-level</i>	

In the farthest north, in Spitzbergen, only the uppermost of these stages is represented, for the snow limit comes down nearly to the water's edge. The heights of the tundras of Lapland have the two uppermost; the mountains of Scandinavia three, and of Central Europe four, the lowest stage being that of the deciduous trees. In the Alpine regions, for example, we find the deciduous trees of the plains at their base extending up to an elevation of nearly 4000 feet, where a climate is reached that corresponds with that of their northern limit in latitude; pine woods follow in the stage between 4000 and 5000 feet above the sea; Alpine plants, corresponding to those of the tundras of Lapland, between 5000 and 9000 feet; and above lies the region which is constantly snow-clad. The snow limit, and with it the limits of all the stages beneath it, varies in different parts of the continent in the same latitude, from causes which have before been referred to, chiefly that of the distribution of moisture, and with the seasons. In winter, just as the realm of snow and ice spreads out southward from the Arctic regions over a great part of Europe, binding up the Baltic and the rivers, and covering tundra and pine forest alike with a white mantle of snow; so at this season the snows of the Alps, reaching farther and farther down, drive the herds before them into the sheltering valleys; in spring and summer the herds follow the retreating snows upwards to higher and higher mountain pastures, till a few weeks later the descent must again be begun.

¹ From *de* and *cado*, falling off.

24. With but few exceptional places, such as the malarious *Pontine Marshes* and the *Maremma* of the east coast of Italy, or the *Dobruja* swamp of the delta of the Danube, the climate of Europe is a very healthy one. Clouds, rain, and fog are commonest over western and south-western Europe, which is first reached by the moist south-west winds from the tropical Atlantic; losing their moisture as they pass, the west winds become thoroughly dry land winds before they reach the Ural. The seaward aspect of western Europe, broken into peninsulas and gulfs, gives it also a maritime climate, which is damp and equable in contrast to the drier climate and excessive changes of temperature in the eastern or more continental region.

Hot south winds from the African desert, the *Solano* of Spain and *Sirocco* of Italy, visit the Mediterranean peninsulas, and appear in the north as the *Föhn* wind, the snow-melter of the Alps. The south-eastern region, that of the Caspian and the south Russian steppes, comes within the indraught of the dry north-east trade wind.

25. **Products and Material Culture.**—Though Europe is naturally a forest-covered country, so widely have agricultural operations been extended, especially in the west and south, that these regions, except along the mountain belts, are all but cleared of wood. The great natural granaries of Europe lie in Russia, Poland, and the plains of the Danube, where agriculture is not so advanced. Cattle and horses, sheep and swine, are domesticated everywhere, but occur in greatest numbers on the natural pastures, the steppes of South Russia; the camel also appears in the neighbourhood of the Caspian. Just as in the extreme north the reindeer takes the place of cattle, so in the far south, in Italy especially, the buffalo supplants the ox. Round the coasts the fisheries employ and give food for a large part of the population: we may note the turbot and lobster fisheries of Norway, those of herring and mackerel from the British coasts, the sardine fisheries of France, and the tunny fisheries of the Mediterranean, besides the inland fisheries of many rivers.

Of mineral products, *gold* is most abundant in the Ural and in Transylvania; *silver* and *lead* in Spain, England, Norway, and the Ural; *quick-silver* in Spain; *copper* in England, Russia, and Sweden; *iron* and *coal* are mined for the most part from Britain; in smaller quantity in Germany, France and Belgium, Austria and Russia.

Volcanic Sicily yields *sulphur*, and *salt* is almost everywhere abundant either as rock or bay salt. In the production of raw materials, in manufacture by aid of machinery, Britain takes the lead, followed by Germany and France and Belgium.

26. The form of Europe adapts itself admirably to the exchange of raw or manufactured products, for large rivers, the natural highways, extend over the wide plains; and in the highland regions, where the streams are smaller and generally unnavigable, long arms of the sea reach into the land. Canals have been constructed to unite the river highways all over Europe; roads and railways have been extended in every direction across rivers and ravines, even over the Alps, or through them by tunnels; upwards of 90,000 miles of railway now form a network over Europe; telegraphs not only bring every corner of the land into momentary connection with every other, but reach out in submarine lines to all parts of the world.

27. **Races.**—The Europeans belong, as we have seen,¹ in by far the greater part to branches of the Aryan race, characterised generally by their white skin, fair hair, and well-formed features;

¹ P. 66.

those of Mongolian race—of whom a yellowish colour, scanty beard, flat features, and oblique eyes are generally characteristic—are comparatively few in numbers. To the latter belong the peoples of north-eastern Europe, the Samoyeds and Lapps, with the Finns and other tribes of Northern Russia.

28. Long before the race which now occupies the greater part of Europe began to migrate from Central Asia, these northern tribes, the Ugrian Mongolians, as they have been called (the *Ogres* of many long-preserved stories), extended over a far larger part of Europe, and were gradually pushed northward into the inhospitable region which they now occupy, by their more powerful successors in Central Europe. The Hungarian "*Magyars*" are believed to be old Scythian emigrants from the environs of the Caspian. Later, the victorious armies of the Osmanli Turks established themselves in the Balkan Peninsula, where, taking to themselves Circassian wives, their descendants have become rather Caucasian than Mongolian in feature.

29. The first swarm of the Aryan race that migrated into Europe is believed to have been that of the *Celtic peoples*, who seem at one time to have occupied a great part of Europe, and who at the earliest dawn of history extended from the Ebro in Spain through France to the mouths of the Rhine. The relics of the language of this people, pressed into the farthest corners of the continent, are still found in the Bas Breton of Brittany, the western hill corner of France; in the Irish tongue still spoken in the western skirts and islands of Ireland, in the Welsh,¹ the Gaelic of the Scottish Highlands, and till last century in the now extinct Cornish of the south-western extremity of England. The Basques of the Pyrenees, however, are not Celts, but a remnant of the ancient Iberians.

30. One chief group of the Aryan peoples of Europe is that which has arisen over the old Roman Empire, hence called the *Romanic group*, occupying the south-western peninsulas. To this belong the Spaniards and Portuguese, the French and Walloons, the Italians and the Romanians; the modern Greeks might be added as related most closely to this group. Here the white colour passes towards brown; a slight form, black hair, dark grey eye, activity, and quick wit are general characteristics.

31. Another great group is that of the *Germanic peoples*, the northern blue-eyed and flaxen-haired barbarians of Roman times, many of whom, marching southward victoriously into the Roman provinces, remained there, giving great vigour to the peoples of those lands whose language and customs they adopted. The descendants of these hunting and pastoral tribes occupy the central and north-western region, as the Germans, the Dutch and Flemings, the Swedes, Norwegians and Danes and Icelanders, and the English, the most mixed of Germanic peoples.

32. The *Slavonic peoples*, pressing in from the east, also appeared as wild barbarians to the more civilised Romans. A heavy figure, light brown or reddish hair, is generally characteristic of the Slavonic people; crouching in submissive obedience to their rulers, they have not the proud freedom of the Germanic nature, and have been longest of all in adopting the cultivation that has distinguished the rest of Europe. To this group belong the Russians and Poles, the Letts and Wends, Czechs of Bohemia, the Servians or southern Slavs (Croats, Slavonians, Bosnians, Montenegrins) and the Bulgarians. The Bulgarians were originally a Finnish tribe from the Middle Volga, who

¹ Wales, from *Wealkas*, plural of *Wealh*, a foreigner. The Welsh were foreigners to the Anglo-Saxons.

crossed the Danube in the seventh century, and, subduing the Slavonic peoples (Mossians) of the Balkan region, became incorporated and assimilated with them.

33. Two elements of population remain to be noted—that of the *Semitic Jews*, scattered as active traders over every part of Europe, and kept apart by their faith; they are most numerous in Poland, which country offered them an asylum during the fierce persecutions and massacres to which they were subjected by Christian Europe from the eleventh to the fourteenth centuries; and the mysterious vagabond *Gypsies*, of Indian origin, restless wanderers, fortune-tellers, tinkers, or beggars, in every part of Europe.

34. **Education.**—Such progress has been made in general culture throughout Europe that its inhabitants belong for the most part to the civilised world; the hunting Lapps and Samoyeds of the far north, as well as the nomadic Nogai, Kirghiz, and Kalmucks of the Russian steppes, are the only general exceptions.

But the advance which has been made by the different peoples is very various; of the three chief groups that have been named, the Germanic stands highest, the Slavonic lowest, in the scale of culture. Education has been general and compulsory in Prussia for a long time; but it was only in 1870 that an act for this end came into force in England, in which country about a fifth of the inhabitants are unable to write. In France, in 1878, nearly a third of the grown-up men and women were found to be unable to read or write; on an average, in Italy, 64 people out of every hundred are totally illiterate, and in the other Romanic nations the scale falls still lower; the masses of the Slavonic people, however, are the most backward; among the Slav inhabitants of Austria only about 15 per cent can read and write, and in Russia only about 12 in every hundred recruits can read.

35. **Religion.**—Excepting the heathen Samoyeds and Lapps, the Europeans are Monotheists, and chiefly Christians; with nearly 5½ millions of Jews, and 4 millions of Mohammedans.

The Christian confessions are three :—

1. The Roman Catholic, chiefly in Romanic countries.
2. The Greek or Byzantine Church, chiefly adhered to by the Slavonic peoples.
3. The Protestant, chiefly in the Germanic section of Europe.

The first includes almost as many adherents as the two latter, while these are about equal in number.

The separation of these confessions was the work of time; when the Roman Empire fell into an Eastern and Western division, the two capitals of Rome and Constantinople, rivalling one another in precedence, drew round them two parties differing to some extent in belief and practice; the Eastern separating, under the Patriarch of Constantinople, from the Western Church under the Pope of Rome. The separation of the Protestants, who hold that the authority of the Bible is supreme, and above that of councils and bishops, from the Roman Catholic Church, took place in the sixteenth century. Of this church the chief sects are the Lutheran, in North Germany and Scandinavia chiefly; the *Reformed*, in Holland, South Germany, and Switzerland; the Anglican, in *England*; and the Presbyterian, in Scotland.

36. Government.—Unrestricted sovereign power is found in Europe only among those peoples who are lowest in the scale of advancement—the servile Slavs of Russia, and the semi-barbarous peoples ruled by the despotic Turks.

In Russia the whole legislative, executive, and judicial power is vested in the Emperor, whose will alone is law; in Turkey the will of the Sultan is absolute. The majority of the states of Europe are governed by limited monarchies, in which the monarchical, aristocratic, and democratic elements are more or less equally represented. With the exception of France, which has frequently changed its form of government since the great Revolution, the Republics of Europe are the states of least importance: they are Switzerland, a confederation of twenty little republics or cantons, the little state of San Marino in Italy, and Andorra in the Pyrenees.

In point of rank, Great Britain, Germany, France, Austria, and Russia, stand first as the “five great powers.” These include within their limits more than two thirds of the entire population of Europe, and have for a long time controlled all continental questions. Second come Italy, Spain, and Sweden; in the third rank are Turkey, Belgium, Holland, Denmark, and Portugal.

In describing the political divisions of Europe somewhat more in detail, it may be well to keep to the groups that have been sketched out, beginning with the highest in culture, the *Germanic*; passing thence to the *Romanic*; concluding with the *Slavonic*, and the lands under the rule of the *Turks*, lowest in the scale, which are most closely connected with Asia.

I. THE TEUTONIC STATES.

1.—THE BRITISH ISLES.

1. That the British Isles distinctly belong to the mainland of Europe may be inferred both from their geological formation, which is found to correspond precisely with that of the nearest parts of the continent, and from the fact that they rise on a submarine plateau which unites them to the mainland, and which beyond their shores sinks rapidly to the depths of the Atlantic. The sea between England and Holland is nowhere so deep that it would cover the cathedral of St. Paul’s if set down in any part of it. If we imagine that the sea level were to fall 60 feet, the height of an ordinary house, the broad *Dogger Bank*, midway between England and Denmark, would begin to show its sands, and if a fall of 200 feet took place one might walk dryshod across to the continent, to Belgium, Holland, or Denmark. From its shallows and banks, its stormy cross seas and frequent fogs, the navigation of the *North Sea* is dangerous; yet the traffic over it is enormous, for it is surrounded by countries, the

inhabitants of which have been famous on the seas from the earliest times. The great highways of commerce from it are *Dover Strait* (Pas de Calais), leading to the English Channel, in the south, and the stormy *Pentland Firth*, which separates Scotland from the Orkney Islands, in the north. The *English Channel*, though deeper than the North Sea, is also shallow; the enclosed *Irish Sea*, between England and Ireland, with *St. George's Channel* and the *North Channel* leading out from it to the ocean, has been scoured deeper in its central lines; but there is a width of about 50 miles of shallow sea, or "soundings," all round the islands in the west, where they face the broad Atlantic.

In looking at the general coast-line of the islands, it is evident that their eastern shores on the North Sea are generally rounded, sandy, and flat, while the western or Atlantic coasts, especially those of Scotland and Ireland, are bold and rugged, broken into deep sea lochs or fiords guarded by islands, recalling those of the Norwegian coast farther north, difficult of approach both from their intricate channels and strong flowing tides.

2. Extent.—As we shall afterwards have occasion to use the British Isles as a standard measure with which to compare the size of other countries over the world, it is important to get as clear an idea as possible of their extent. The main island of Great Britain, roughly triangular in shape, measures about 600 miles in a straight line from its south-west corner, where the granite walls of *Land's End* and the dark serpentine cliffs of the *Lizard* run out into the Atlantic, to the northern apex, the high red sandstone rocks of *Dunnet Head*, frequented by sea-fowl, or its companion *Duncansby Head*, where John o' Groat's House¹ stood, on the beach of the Pentland Firth.

If we could walk this distance straight across country at the rate of 20 miles a day, it would take us a month to go from one extremity of the island to the other.

The base of the island, forming the north coast of the English Channel, measures only about half this distance, or 320 miles; and the eastern side, from the chalk cliffs of the *South Foreland*, on the Strait of Dover, to the Pentland Firth, is about 540 miles long. No part of the interior of Great Britain is more distant than three or four days' walk from the sea on one side or other. In the narrower parts of the north of Scotland indeed, where the Moray Firth runs into the land, it is an easy day's journey from the head of this inlet of the North Sea to that of one or other of the opposite sea lochs running in from the Atlantic.

The area of the island is nearly 90,000 square miles; its north-

¹ John de Groot, or Groat, of Warse, built a house on the west side of this headland in James IV.'s time, probably as a ferry house to the opposite Orkney Islands; settling at the same time the controversies between his brothers, by giving it eight sides, so that each might enter by his own door.

ern division, Scotland, including 30,000 ; its southern, England and Wales, nearly 60,000 square miles (58,311).

The second island, *Ireland*, more rounded in general outline, measures 300 miles from *Malin Head*, its northernmost point, to *Mizen Head*, its most southerly extremity, and 200 miles from *Carnsore Point*, its south-eastern corner nearest England, to *Erris Head*, its north-western promontory on the Atlantic ; its area is 32,524 square miles.

The most extensive of the many satellite island groups and islets which belong to the British Archipelago, are those which lie off the broken west coast of Scotland, the wild and rugged Outer and Inner Hebrides, of which *Lewis*,¹ separated by the channel called the Minch,² and *Skye*,³ *Mull*, *Islay*, and *Arran*, in the inner group, are the largest. The *Orkney* group, separated from the north of Scotland by the turbulent Pentland Firth, consist of no fewer than fifty-nine rocky islets ; and the *Shetlands*, forty miles farther north, comprise upwards of a hundred separate points. The high Isle of *Man*,⁴ in the middle of the Irish Sea ; *Anglesey*,⁵ close to the Welsh coast, and now united to it by the famous railway tubes across the Menai Strait ; and the *Isle of Wight*, "the garden of England," in the English Channel, separated from the mainland by the busy Solent, are the others of importance. The Channel Islands, of which *Jersey* and *Guernsey* are the largest, belong politically to Britain, but are physically parts of France.

The names of the many capes and headlands, with those of the inlets between, and the relative positions of these, will be learned far better from the map than from any written description, so that it seems useless to give a list of them here.

3. Relief.—In the island of Great Britain, the broadest distinction in the relief of the land is that the highest portions lie generally to north and west, the lowlands to south and east. This corresponds to the geological structure of the islands ; the older rocks of the west and north forming the mountainous region, the newer strata of the south and east seldom rising to any great elevation.

The heather-covered Highlands which fill the north of Scotland are divided by the great natural passage of *Glen More*, which runs in a straight line across the island from north-east to south-west, into two chief groups, the northern and central.

The northern group consists of irregularly-distributed and often almost isolated masses, separated, it may be, by deep sea-floids, and presenting every variety of contour, from that of the round mass of *Ben Wyvis*⁶ to the steep wall-like sides of *Suilvein*⁷ or the sharp peak of *Ben Stack*. The Central Highlands or the *Grampians*, extending from the peninsula of Cantyre north-westward to the precipitous coast of Buchan on the North Sea, are far more massive and continuous. *Ben Nevis*,⁸ a huge round outlier of the range

¹ Norwegian *Ifoðhhus*, the "sounding house." ² Recalling *La Manche*.

³ Icelandic *sky*, a "cloud."

⁴ Or *Mona* ; supposed to be derived from the Sanscrit root *Mān*, which appears in *Monk*, referring to the reputed holy character of the isle in ancient times (Cumming). The native name is *Ellan Vannin veg Veen*, "dear little isle of Man."

⁵ = *Anglesey*, "Englishman's Island."

⁶ Ben or Pen = mount = "The Mountain of Horror."

⁷ "The Sugar-Loaf."

⁸ "The Mountain of Death."

on its north side, ascending abruptly from the shores of Loch Eil at the mouth of the Great Glen, is the highest mountain of the British Isles (4406 ft.); *Ben Muich Dhui*,¹ in the central part of the range, is second in height (4296 ft.)

The *Campsie*, *Ochil*, and *Sidlaw* hills are outliers of the Grampians on the south, separated from them by Strathmore = the great valley.

The Southern Highlands of Scotland, stretching from the peninsula which terminates in the Mull or headland of Galloway on the North Channel to St. Abb's Head on the German Ocean, are again more broken, and separated by river valleys. *Mount Merrick*, in the south-west (2764 ft.), is their highest point; the *Lowther Hills* form their central group; the *Penilands*, *Moorfoot*, and *Lammermoor* hills their more detached portions, on the north-east.

With the Cheviot hills, the boundary range between Scotland and England, begins the long *Pennine chain*, which reaches due south into the heart of England. *Cheviot Hill*, in the north (2676 ft.), *Crossfell* (2892 ft.), and *Wharfedale* (2414 ft.), and the *Peak of Derby* (1981 ft.), in the south, mark the summits and direction of the chain. To the west of the Pennine chain rises the compact circular knob of slate mountains of Cumberland, with the summit of England proper, *Scaufell*² (3161 ft.); and corresponding to this mass, near the opposite coast, the eastern moorlands and *wolds*³ of Yorkshire (1489 ft.)

Separated from the Pennine heights by the plain of Cheshire (west of England) rise the highlands of Wales, collectively called the *Cambrian Mountains*. The main direction of the connected ridges forming this mass is the same as that of the Scottish Highlands, from north-east to south-west, as may be noticed in the peninsula which runs out to Braich-y-Pwll from *Snowdon* (3570 ft.), the highest mountain of South Britain, in the north of the mass; or that which extends on the south to St. David's Head, from the central heights of *Plynlimmon* (2469 ft.), and *Radnor Forest*. The *Black Mountains* of South Wales, highest in the *Brecknock Beacon* (2910 ft.), are a more distinct part of the highland, and the *Malvern Hills* (1395 ft.) an almost detached outlier in the east.

Across the Bristol Channel we come to the heights of the south-western peninsula of England, with its three groups of *Exmoor* (Dunkery Beacon, 1707); *Dartmoor*, with its rugged granite tors⁴ (2040 ft.); and the *Cornish Heights* (1368 ft.) These are all the more important mountain groups of Great Britain.

Over all the south and east of England the elevations are comparatively insignificant; broad, undulating, grassy uplands, called the *South Downs*⁵ and the *Chiltern Hills*, rarely attaining more than 800 feet of elevation, follow the chalk formation across southern England as far as Beachy Head on the Channel and the Foreland Cliffs on the Strait of Dover. The limestone *Cotswold Hills* between these and the Welsh Highlands rise somewhat higher (1093 ft.)

4. Almost all the lowlands of Great Britain, as we have noticed, lie to the east and south. Here we find the plain of the "*New Forest*" in Hampshire and the treeless *Salisbury Plain*, the broad open *Valley of the Thames*, the "*Eastern Plain*" of Essex, Suffolk, and Norfolk, extending with rounded shores towards the North Sea; the low "*Fen district*" behind the shallow estuary of "*The Wash*," from which many tracts have been reclaimed; the long "*Plain of York*" beyond; the valleys of the Tees and Tweed, the latter

¹ "The Black Boar Mountain."

² "The Craggy Hill."

³ *Wold* or *weald* (German, *wald*), forest, suggesting the former wooded covering of these heights, as in the present forest hills of Germany.

⁴ *Tor*, Celtic, "a projecting rock": "occurs also in *Taurus*, *Tauern*, etc.

⁵ *Dun*, Gothic and Celtic = a "hillock" or "dune."

including the cultivated "*Merse*," the march or border land of Berwickshire; the Scottish "*Lowlands*" between the Central and Southern Highlands; the "*Curse*" or alluvial plain of Gowrie, north of the Tay; "*Strathmore*," the broad valley which extends between the Grampians and their southern outliers; the *plain of Cromarty* and the level moors of eastern Caithness farthest north of all. The only extensive lowlands on the western side of the island are the "*Vale of Severn*," the "*Plain of Cheshire*," between the Pennine chain and the Welsh Highlands, the lowlands round the estuary of the Solway, those of Ayrshire, and the *Valley of the Clyde*.

5. Crossing over to Ireland, though we find the lines of elevation running generally in the same direction as those of Great Britain, or from north-east to south-west, as shown in the peninsulas of the south-west coast, the mountains appear rather in detached clusters than in definite ranges, with shapes rather rounded than abrupt, forming a fringe round the coasts. Three groups, those called the *Twelve Pins*, *Mweelrea* (2688 ft.) and *Craagh Patrick*, and the *Nephin Mountains*, form the central promontory of the western coast in Connaught. Farther north we come to the coast group which culminates in *Cuil-gach* (2188). Round the north coast rise the *Derryveagh Mountains* (Errigal, 2466), and the *Blue Stack group* in Donegal; the *Sperrin Mountains* (2240), with Carnogher and Trostan on the coast; the plateau of Antrim, which forms the precipice of *Fair Head* (530 ft.), the nearest point to the Scottish coast, and the remarkable basaltic scenery of the Giant's Causeway. On the eastern side we find the granitic groups of the *Mourne Mountains* in Down (2796), and of the *Wicklow Mountains* (Lugnaquilla, 3039 ft.) Near the centre of the south coast rise the *Comeragh*, *Knockmealdown*, and *Galty Mountains* (3015 ft.); and in the south-west the *Mountains of Kerry*, the chief of which are Mangerton and the Macgillicuddy Reeks, the latter containing *Carn Tuail*,¹ the summit of all Ireland (3414 ft.)

The only important groups that lie centrally in the island are the mountains of western Tipperary, round their summit *Keeper* (2278 ft.), and the *Slieve² Bloom* (1733 ft.) to the northward of these.

6. Within the circle of these heights, and branching out between them at many points to the sea-coast, lies the *Great Plain of Ireland*, averaging perhaps 200 ft. in elevation above the sea. The highest point between Dublin and Galway, east to west across its centre, is only 320 ft. above the sea-level. Many parts of it, such as that which surrounds Lough Neagh in the north, are scarcely 50 feet in elevation.

7. **Hydrography.**—As the higher mountains of Great Britain rise in the west of the island, so the water-parting line following the greatest general height lies nearer the west than the east. The longer and gentler slope of the island is to the North Sea; the shorter and steeper to the Atlantic side.

Hence most of the larger rivers belong to the North Sea drainage. From south to north on this side we find the *Thames*, the largest of all, 200 miles in length, draining an area of over 5000 square miles, giving a navigable highway for 160 miles to Lechlade, and possessing a tidal upflow as far as Teddington Lock, 60 miles above its open estuary. The next longest river to northward is the *Great Ouse*, navigable from the west for 90 miles to Bedford; then we come to the group of rivers which water the long plain of York, and

¹ Irish, *carraun*, a reaping-hook, and *tuathail*, left-handed or reversed, applied in reference to the curved and jagged edge of the mountain.—*Richardson*.

² Irish, *Sliabh* = mountain.

unite in the estuary of the Humber, including the *Trent* from the south, navigable 105 miles to Burton; the *Yorkshire Ouse*, navigable 45 miles to the city of York, with its main tributary the *Derwent*. Farther north are the *Tees* and *Wear*, and the busy *Tyne*. Passing into Scotland, we reach the *Tweed*, valuable for its fisheries, but unnavigable; the *Forth*, winding in links through the fertile lowland, navigable to Stirling; the *Tay*, navigable to Perth; the rapid *Dee* and *Spey* from the Grampians, and the *Ness* from the lakes of Glenmore.

On the western or Atlantic side of Britain, the largest river, the second in drainage area in the island, is the *Severn*, 178 miles long, drawing its upper tributaries from the Welsh mountains, and its chief lower affluent, the navigable *Avon*, from England, curving round to the British Channel; it is navigable to Welshpool, 120 miles from its mouth. The *Mersey*, though a short river, forms one of the most important estuaries of the island, the "Liverpool Channel." Scarcely less valuable in this respect is the lower *Clyde*, the most important commercial river of Scotland, navigable to Glasgow, and forming in its upper valley the largest falls in the island.

Almost all the river estuaries of Britain are great highways of commerce; the Solway Firth, between England and Scotland on the west coast, is the most important exception, its swift and strong tides, rushing in over the sands so fast that a galloping horseman can scarcely escape from them, being exceedingly dangerous to shipping. Besides these estuaries many natural harbours lie round the coast. Such are the sheltered Solent and Portsmouth harbour behind the Isle of Wight, Plymouth Sound farther west, and Milford Haven on the south coast of Wales, unequalled perhaps in the world as a deep and spacious harbour thoroughly sheltered from all winds.

8. Among the many canals which have been constructed from river to river by aqueducts over valleys, by tunnels, or locks over heights, to aid inland navigation in Britain, may be mentioned those which, leaving the Thames at London, Brentford, and Oxford, pass through the heart of the country to the manufacturing districts, to Birmingham and Stafford; the Thames and Severn Canal, passing by a tunnel more than two miles long through the Cotswold hills; the Trent and Mersey and Leeds and Liverpool Canals, uniting the navigation of these rivers across central England; the Forth and Clyde Canal in the lowlands of Scotland; and the Caledonian Canal, joining the deep lakes of the Great Glen of the north of Scotland, from the North Sea to the Atlantic.

9. The lakes of South Britain are comparatively few and small. *Bala Lake*, only four miles long, is the largest in the Welsh Highlands, and in England the only considerable group is that which clusters round the knot of mountains in Cumberland—*Windermere*,¹ the largest, 10 miles in length, *Ullswater* and *Derwentwater*, the next in size. Scotland, however, abounds in lakes in all three Highland districts, and their number increases towards the north. *Loch Lomond*, 24 miles long, the largest in Britain, *Loch Awe*, *Loch Tay*, *Loch Rannoch*, and *Loch Erich*, may be mentioned as the largest of those in the Grampian valleys. *Loch Ness*, 24 miles long and 800 feet deep, with *Loch Oich* and *Loch Lochy*, fills the deep trench of the Great Glen between the Grampians and the Northern Highlands; *Loch Shin*, 20 miles long and only 1 mile broad, and *Loch Maree*, are the largest of the Northern Highland region. On the western watershed of the Northern Highlands, however, lakes are so thickly sown that hundreds may be counted from a mountain-top, and the Outer Hebrides are covered with a perfect network of them.

10. In Ireland, in contrast to Britain, the watersheds are more evenly

¹ Mere = lake (meer—mare).

divided towards all points of the compass; the greatest drainage, however, is to the west, to the Atlantic. On this side we find the largest river, the *Shannon*, 160 miles long, draining an area second only to that of the Thames in extent, and affording a navigable highway over the central plain almost up to its source. The *Erne* is another large river of the western drainage of Ireland. Flowing northward we find the *Foyle*, and the *Bann* passing through Lough Neagh, and navigable for 55 miles. On the eastern watershed the *Lifey*, from the Wicklow Mountains, is the most important stream; the *Barrow*, navigable to Athy, 70 miles, from its fine estuary of Waterford Harbour, receiving near its mouth the almost equally important *Nore* and *Suir*, is the chief river of the southern drainage; the *Blackwater*, affording 22 miles of navigation, and the *Lee*, flowing to Cork Harbour, are the other notable rivers of this slope.

By means of the canals inland navigation is extended throughout the plain of Ireland from sea to sea, north, west, and south and east. Among the natural harbours of Ireland which are not river estuaries properly so-called, may be noted Belfast Lough, Carlingford Lough, Dundalk Bay, Dublin Bay (with the artificial harbour of Kingston), and Wexford Bay on the east coast; Cork and Kinsale harbours in the south. Tralee Bay, Galway Bay, the proposed terminus of a line of steamers to America, and Sligo Bay, are natural ports of the west coast; Lough Foyle, on the north coast, leads to Londonderry, the chief port of that side.

The lakes of Ireland, in contrast to those of Britain, belong rather to the plain than to the mountain regions. *Lough Neagh*, in the basin of the Bann in the north, is the largest of all in the British Islands, 154 miles in area, 20 miles in length. The lakes of the *Erne*, upper and lower, stand next in size; *Loughs Corrib* and *Mask* in Connaught, joined by a subterranean channel, are the largest in the west. The Shannon has three large expansions, *Loughs Allen*, *Ree*, and *Derg*. Most famous for their scenery, however, are the much smaller highland *Lakes of Killarney*, embosomed in the south-western mountains of Kerry.

11. Climate and Landscape.—The climate of the British Isles displays the effect of maritime situation, in relation to the prevailing south-westerly wind currents of the temperate zone, more remarkably than any other part of the earth between the same latitudes (50° to 60° N.) In comparison with that of any continental region between the same parallels the climate is mild and equable; the winters being considerably warmer, the summers cooler. The moist and genial south-west winds prevail throughout the year, excepting in the spring months, when for a few weeks they give place to north-east winds, which appear to be dry and parched, because they are flowing from colder to warmer latitudes, and have a great capacity for absorbing moisture from every surface over which they pass. Ireland, from its more maritime position, and from its first arresting the moist west winds, has a greater rainfall (average about 36 inches) than Britain; its climate and moisture being so favourable to vegetation as to have given it from early times the name of the “Green” or “Emerald Isle.”

The high side of Britain faces the west, and, arresting the moist winds, con-

densens upon itself an excessive rainfall, leaving for the eastern slope only a moderate supply. We have already noticed that the rainfall of Western Britain is more than double that of the eastern coast-lands. A regular decrease of temperature takes place from south to north in both islands with increasing latitude. The distinction between maritime and continental climates, however, begins to show itself clearly in the islands themselves, the Atlantic sides being one or two degrees cooler on an average in the summer months, and several degrees warmer in winter, than the slopes which face Europe. Thus, the south-west coast of Ireland has an average temperature of 62° in July, while in London, in the same latitude, the mean temperature is 64° ; but in January that part of the Irish coast enjoys a mean temperature of 43° , while the average for London is as low as 37° .

12. The climate of the British Isles belongs naturally to that of the forest zone of Europe, Scotland mainly to the pine wood belt, England and Ireland to that of the deciduous trees; woods still form a part of almost every landscape within them, and in earlier times these no doubt spread over the greater part of the country, though as land became valuable and as agriculture spread the forests were gradually cleared away. Many parts of England—such as the “*New Forest*” in Hampshire, the *Forest of Arden* in Warwick, *Sherwood* in Nottingham; and parts of Scotland—in the fir forest of *Rothiemurchus* and the pine-covered slopes of Braemar—remain under their natural covering; many more wide districts, such as the Saxon *Wealds* (woods) of Kent, the *Wolds* of Lincoln and Yorkshire, the deer “forests” of Scotland, retain the names given them when they were covered with wood. The black oak roots and trunks preserved in great numbers in the Irish bogs testify to the ancient forest landscape of the great plain of Ireland, though at the present day the island is deficient in timber, the woods being restricted now to the hilly districts.

13. In South Britain a line drawn diagonally across from the mouth of the Tees round the plain of York to the vale of the Severn, and across the southern peninsula to the mouth of the Exe, marks out two divisions of England which are strongly contrasted in several ways. North and west of this lie the mountainous districts of Cumberland, the Pennine chain, Wales, and Cornwall, in which pasturage prevails over agricultural land; south and east of it lie the agricultural and pastoral lowlands, where corn fields, market gardens, and meadows enclosed by hedgerows, take the place of the more open hill pastures and moorlands,¹ divided by walls and fences. The only extensive lowland in the north-western region is the pastoral lowland of Cheshire, famous for its cheese. This line, as we shall afterwards notice, also shuts off the mining and manufacturing districts of the north-west of England from the non-manufacturing region of the south-east.

North Britain divides itself naturally into the agricultural lowlands, occupying about a fifth of the area, in which the science and practice of this branch of industry have been carried to a higher point than in perhaps any other part of the world; and the pastoral highlands, in which numbers of sheep and cattle are reared. Very large areas of the Grampians and northern moorlands and heather-

¹ Anglo-Saxon *mór* = waste land.

covered hills are, however, preserved as "deer forests" and grouse covers, to the almost total exclusion of sheep and cattle.

The great plain of Ireland, in contrast to the lowlands of Britain, is almost entirely a pastoral country. Till the middle of last century it was exclusively so, and to the present day its agricultural system is very inferior. Cattle are far more abundant than sheep; butter is produced in immense quantities, but very little cheese. Characteristic of the surface of the Irish plain are its spongy peat bogs, occupying fully a seventh of the whole area of the island. The largest of them is the succession of morasses which lies east of the Shannon, called the *Bog of Allen*, which covers 350 square miles. From the level character of the plain great difficulties are met with in the attempts to reclaim this land, which would be almost waste did it not yield valuable stores of peat fuel or "black turf," as it is called.

14. England and Ireland lie within the climatic belt in which wheat and barley flourish, and the former country excels in the cultivation of these grains, though not nearly enough can be grown for its population. While the greater number of Englishmen live on wheaten bread, the Irish are more dependent on the potato (first introduced from Virginia), the cultivation of which in Ireland has become more extensive than in any other European country. Much of the soil is suited to the growth of flax, and in the north this is by far the most important crop, giving employment both to an agricultural and manufacturing population. Scotland passes north into the climatic belt in which the hardier oats thrive best, and oatmeal porridge and cakes are consequently supposed to be the popular food.

15. **Mineral Products.**—To north and west of the agricultural division of England lie all the great mining districts of the country. Of these the coal and iron fields, as determining the most advantageous position for those manufactures in which steam machinery is employed, are the most important.

The principal coalfields in England are these:—The *Newcastle coalfield* in the north, lying across the basin of the Tees; the *Yorkshire and Lancashire fields*, one on the eastern, the other on the western side of the Pennine chain of mountains, occupying the northern part of the plain of Cheshire; the *Staffordshire field*, farther south, between Trent and Severn; and the *South Wales coalfield*, on the north side of the Bristol Channel. Some idea of the enormous value of these mines, which are by far the most productive in the world, may be gained by remembering that they yield every year about 135 millions of tons of coal, or about four tons to every man, woman, and child in the British Isles, besides 6½ millions of tons of pig-iron; that is, fully half as much coal and iron as is given by all other parts of the earth put together.

The *Tin mines of Cornwall* are by far the richest in Europe, but here, from the absence of coal, there are no manufactures at all. The most important *salt mines* are those of Northwich in Cheshire.

In Scotland a rich coal and iron field similar to those of England extends from the Firth of Forth across the Clyde basin to the coast of Ayrshire.

Over this area, accordingly, with few exceptions, the manufacturing industries of Scotland are congregated. Though iron and coal are widely distributed in Ireland, yet, from the thinness and poverty of the seams, mining has never become important there. Gold and silver exist in the Wicklow mountains, but the mines were abandoned as unproductive at the beginning of this century.

16. Inhabitants and Race.—During the four centuries in which the Romans held the lowlands of South Britain, many of the native British tribes became Romanised, but the Celtic peoples of the mountain regions of Wales, the Scottish Highlands, and of the west of Ireland, have retained their language and more or less pure blood to the present day. After the fall of the Roman power the invading Anglo-Saxons and Jutes conquered the island, and to their strong Germanic element followed that of the brilliant Normans, the Northmen who had settled in Normandy, and who had there adopted the religion, language, and manners of the French.

Thus the population of these islands is a mixed Celtic, Germanic, and Romanic one, all its elements being more thoroughly amalgamated in the populous lowlands of Britain, the Celtic remaining purer in the highland regions, which are more difficult of access. In Ireland the Teutonic element prevails along the eastern margin; thence towards the western mountains the transition is gradual to the pure Celtic.

The English character thus combines the characteristics of German and Gaul, the earnest conscientiousness of the one with the active wit and skill of the other.¹ The English language, though it has perhaps a larger proportion of words of Latin than of Saxon derivation, and has incorporated words from almost every land of the globe, retains its Teutonic basis.

In 1881 the population of England and Wales was	25,968,000
" " of Scotland	3,734,000
" " of Ireland	5,160,000
In all, including the islands	35,247,000

In point of numbers the population of England is at the present day nearly four times as large as it was at the beginning of this century. In the same period the population of Scotland has more than doubled itself. In Ireland, however, the total number of inhabitants at the present day is nearly the same as at the beginning of the century, 2½ millions of people having emigrated from it during the past quarter of a century.

17. Religion.—In regard to religion, rather more than half of the population of England claims membership with the Anglican branch of the Reformed Protestant Church—the Church of England; the most prominent dissenting bodies being those of the Wesleyan Methodists, the Independents, and Baptists. About a twentieth part of the population (one million) is Roman Catholic.

While the English Church has three orders of clergy—bishops, priests, and deacons—under the two archbishops of *Canterbury* and *York* (the former of whom is the first peer of the realm, next to the royal princes), the Established Church of Scotland is a perfect democracy.

¹ As it is well to see ourselves as others see us, it may be noted that the English are considered by Continental writers as wilful, proud, and unapproachable, conservative in customs, not unfrequently subject to "spleen," a "kind of dulness induced by the foggy and melancholy climate."

The dissenters from the Church of Scotland—chiefly the Free and United Presbyterian Churches—are probably superior in number to the adherents of the State Church. In Ireland the mass of the population remains Roman Catholic, only a fourth belonging to the Protestant, Episcopalian, Presbyterian, or Dissenting bodies. The Roman Catholic Church of Ireland is under four archbishops of *Armagh, Cashel, Dublin, and Tuam*. Both the Government subsidies, to the Maynooth College for the education of priests, in Kildare, and the royal bounty to the Presbyterian clergy, were abolished in 1869.

18. Education.—Public education in Britain has made immense progress during the past quarter of a century, though, as we have already seen, the country is not so far advanced in this respect as some of the continental states. The manufacturing and mining portions of England are lower in the educational scale than the agricultural. By the legislation of 1870 it was made compulsory upon parents to give their children the advantage of education.

Besides the two ancient (thirteenth century) Universities of *Oxford and Cambridge*, in close connection with the Church of England, though now open to all, there are the modern ones of *London and Manchester* (Victoria University), which have no ecclesiastical connection, and of which the first confines itself to examining and conferring degrees. *Durham* has a small University, and there are several Colleges, such as that of St. Bees, in Cumberland, for the education of the clergy of the north of England; at Lampeter, in Cardiganshire, for the Welsh clergy; University College, and King's College, in London. The great Public Schools of England, in the order of their foundation, are Winchester (1387), Eton (1441), St. Paul's London (1510), Manchester (1515), Berkhamstead (1545), Birmingham (1552), Shrewsbury (1552), Christ's Hospital London (1553), Tunbridge (1553), Repton (1556), Westminster (1560), Merchant Taylors' London (1561), Bedford (1566), Rugby (1567), Harrow (1571), Uppingham (1587), Charterhouse Godalming (1611), Clifton, and the more modern Cheltenham, Marlborough, Wellington, Rossal, and Haileybury.

In Scotland the establishment of parish schools began with the Reformation, and the lower classes of that country have always stood higher in education than those of England. Higher education is provided at the Universities of *Edinburgh, Glasgow, Aberdeen, and St. Andrews*; but in these the students are not resident, as at Oxford and Cambridge.

In Ireland education stands lower than in England, more than 35 per cent being illiterate. Now government elementary schools have been established in every district. For higher education there are *Dublin University* (1592), with its one College of Trinity, and the *Royal University of Ireland*, on the plan of that of London, and Queen's Colleges at Cork, Belfast, and Galway.

19. Industries and Chief Towns.—Population is densest and is increasing most rapidly over those areas of Britain in which the manufacturing industries are busiest, and in the great commercial seaports which carry on the exchange of raw and manufactured products with foreign lands.

Of the latter, *London*, with its four millions of inhabitants, the greatest city in the world, extending over 123 square miles, has been likened to a province covered with houses. Its population exceeds that of all Scotland. Its traffic in later times has risen to a marvellous extent; its harbour, the Thames, is crowded with a press of ships from

all corners of the earth, filling the magazines round its docks with the products of every land; and its streets are thronged with busy crowds.

Hull, the *Tyne Ports* (Newcastle, Gateshead, and Shields), and *Sunderland*, with London, form the great outlets of the east of England.

Liverpool (with Birkenhead), ranking even before London in maritime importance, and *Bristol*, are the great outlets and seats of commerce in the west of England, as *Southampton* and *Plymouth* on the Channel are in the south.

20. The most important of all the textile industries of England is that of cotton, which has centred itself in *Manchester* (with Salford and Chorlton), and in its satellite cities on the coalfield of Lancashire and Cheshire (Preston, Blackburn, Oldham, Wigan, Bury, Rochdale, Bolton, Stockport, Macclesfield), drawing a dense population round these centres, with their thousands of factories, fed with raw material from abroad, and relieved of their manufactured products by Liverpool.

The woollen manufactures, next in importance, are gathered over the coalfield on the opposite side of the Pennine chain, in the great towns of *Leeds* and *Bradford*, as well as in Halifax, Huddersfield, Wakefield, and Dewsbury, clustering round these. Linen manufactures centre at *Barnsley*, farther south, also on this Yorkshire coalfield. Three outlying woollen manufacturing centres may be noted; these are *Leicester*, in a famous sheep-rearing district, and *Kidderminster*, noted for its carpets, *Stroud*, *Bradford*, and other towns in the west of England, noted for the quality of their cloth. Newtown, in Montgomeryshire, is the centre of the Welsh flannel trade.

Hardwares have two great points of production—the one round *Sheffield*, on the Yorkshire coal and iron field, the other round *Birmingham* and its satellite towns on the South Stafford coal and iron field (Wolverhampton, Wednesbury, Bilston, Dudley, Walsall), called the “Black Country” because large parts of it are so completely cut up with collieries and ironworks that no cultivation exists.

In North Staffordshire, between the iron and the cotton manufacturing regions, lies the “Potteries,” a district which by supplying coal is able to maintain its staple industry. *Stoke-upon-Trent* is the centre of the cluster of Pottery towns (Burslem, Longton, Hanley, Tunstall), all connected by lines of busy hamlets. Worcester, on the Severn, is also celebrated for its pottery.

English silk manufactures give importance to three separate districts, those round *Conington* and *Macclesfield*, in Cheshire; *Derby*; and *Coventry*, in Warwickshire. *Nottingham* town combines silk and cotton manufactures in hosiery and lace work. *Stafford* town supplies boots and shoes to all the manufacturing towns which lie round it.

21. The coal trade of North England centres in the *Tyne ports* and *Sunderland*, which are also famous for their iron ships and engines, and their chemical works. The South Wales iron and coal field has its heart in *Merthyr Tydfil*, the largest town of Wales; *Cardiff*, its port, has fine docks and iron shipbuilding yards, besides its large coal export trade; *Swansea* is the head-quarters of copper and tin smelting, from ores brought thither from the most distant parts of the world; *Milford Haven* aspires to becoming the rival of Liverpool in the trade with America.

Among the few large towns besides London which lie outside the manufacturing and mining region of England, may be noted *Norwich*, in agricultural

Norfolk, a seat of manufactures of the most various kind, introduced by about 4000 Flemings who fled thither in Queen Elizabeth's reign; *Brighton*, on the channel, which has grown to importance solely from its attractions as a sea-side watering-place; *Bath*, near Bristol, which owes its prosperity to its hot saline springs; *Portsmouth*, the chief naval arsenal and fortress of Britain; and *Devonport*, next Plymouth, also a fortified arsenal and dockyard.

22. On the Scottish coal and iron field, *Glasgow*, favoured by its position on the estuary of the Clyde, has risen to be at once the great commercial and manufacturing centre of the country, carrying on a large trade with all parts of the world, in manufacturing cottons and machinery, and in building iron ships. A number of manufacturing towns (*Paisley*, noted for its shawls; *Greenock*, for its sugar-refining; *Dumbarton*, for its iron ships; *Airdrie*, in the midst of the collieries and iron works) have risen round Glasgow over the Scottish coalfield.

Edinburgh, the metropolis of Scotland, which grew up originally beneath the protecting walls of its castle, is not a manufacturing town, but derives its importance mainly from the law courts, its university and schools, and its book publishing trade; *Leith*, the port of Edinburgh, is mainly engaged in the Baltic grain trade; *Dundee*, on the estuary of the Tay, owes much of its prosperity to its jute and hemp factories, and to its Greenland whaling and sealing trade.

23. Owing to its poverty in coal and iron, the manufactures of Ireland have not attained an extent at all comparable with those of Britain. Its only extensive manufacturing district is that which lies round *Belfast* in the north-east, where the flax, grown largely in the north of the country, is made into linen. The linen district extends to *Armagh* on the west, and *Coleraine* in the north.

Dublin, the capital, is not a manufacturing town, though its poplins and porter are celebrated; nor has it any extensive foreign trade through its port of *Kingstown*.

Cork, with its fine harbour the "Cove of Cork," or *Queenstown*, in the south; *Limerick*, on the Shannon; *Galway*, the port of the west; *Londonderry*, in the north, are the other important centres of population in Ireland.

24. Trade and Communications.—Several circumstances which may be gathered from the foregoing paragraphs have combined to secure for the United Kingdom its grand commercial pre-eminence in the world:—the position of the islands in the centre of the land hemisphere of the world; their temperate climate, allowing free navigation of the surrounding seas at all seasons; the proximity of every part of them to the highway of the sea; the splendid system of communication over the land, by river, canal, and railway; the excellence of the manufactures; and above all their economy, due to the presence of coal and iron in conjunction over large areas. Upwards of 20,000 sailing and steam ships belong to the ports of the United Kingdom, and are engaged in the home and foreign trade of the islands. These, with foreign vessels, now bring or take away more than 50 millions of tons of goods every year, and the amount is steadily and largely increasing.

The chief among the many articles of home produce or manufacture exported from the British Isles, are cotton goods (£70,000,000), woollens, iron

and steel, coal, machinery, and linen. Among imports, corn and flour, cotton, wool, sugar, timber, and tea, take rank one after the other.

Besides the fluvial and artificial waterways extending over the lowlands of the British Isles, a network of roads, some of them following the old straight lines laid down by the Romans, reaches to every corner of the islands. Since 1825, when the first short line of steam-carriage railway was opened for passenger traffic between Stockton and Darlington, in Durham, railroads have been made to intersect the country in all directions, till there are now (1881) 18,000 miles of these iron highways in the United Kingdom. Telegraph wires, also first brought into practical use in England for general purposes in 1837, now join every city, town, and hamlet in the kingdom, and by sea cables place the British Isles in immediate union with almost every part of the world.

25. Political Divisions.—South Britain is divided into 52 counties or shires (40 in England, 12 in Wales); Scotland into 32 counties, and 1 stewartry; Ireland into 4 provinces, and these again into 32 counties. These divisions have no sort of uniformity or relation in point of extent or population. Yorkshire, the largest of the English counties, is 40 times the size of Rutland, the smallest; and in population the variations are still greater.

Several of the counties of England—such as Kent, Essex, Norfolk, Suffolk—were formed out of the small Anglo-Saxon kingdoms, earls being substituted for kings as the consolidation of the country into one kingdom advanced; the Saxon earls were replaced by Norman *counts* after the conquest. Other small kingdoms were split up into *shires* (*sciran*, to divide); some—such as York, Durham, Cheshire, and Worcester—take their names from ancient bishoprics. The name *stewartry*, still applied to Kirkcudbright in the south of Scotland, though its government does not now differ from that of other counties, recalls the time when Galloway (the present Wigton and Kirkcudbright), after it had forfeited its Celtic princes and laws, under whom it had been rather a dependency than an integral part of Scotland, was placed under a steward who had more extensive powers than a sheriff.¹

The four provinces of Ireland—Ulster, Leinster, Munster, and Connaught—retain the names of old Celtic kingdoms, the division into counties having been made after the conquest by England, as the country gradually came more under English influence, between the twelfth and the sixteenth centuries. The names and relative positions of these internal divisions will be best learned from the map.

26. Government.—Ireland, as already noticed, was conquered by England in the twelfth century, and Scotland was united to the English crown at Queen Elizabeth's death (1603). Ireland remained a distinct kingdom till 1801, when it was joined with Great Britain to form the United Kingdom of Great Britain and Ireland. By the constitution, the supreme legislative power is vested in the *Parliament*,² the origin of which may be traced to the great Saxon Council or Wittenagemote.³ For a long period this council consisted of the king's *barons*, or those who held estates from the crown; but its constitution was altered by the Magna Carta (1215), by which it was ordained that all archbishops, earls, and greater barons, should be summoned to form what is now called the House of Lords. As cities grew up, chiefly round the protecting walls of the baronial castles, and their citizens or burgesses⁴ grew

¹ *Scir-gerefa*, the reeve or fiscal officer of a shire.

² Meeting of wise men.

³ *Fr. parier*, to talk.

⁴ *Sax. burg* = a hill, castle.

wealthy, it became necessary to summon some of their members to the council; in the same way the freeholders of the country came to be represented by *knights of the shires*. The constitution appears to have taken this form in the thirteenth century, when writs were issued directing the election of two knights for every county, two citizens for every city, and two burgesses for every borough, to form the Lower House, or Commons of the Grand Council. The Acts of union with Scotland and Ireland fixed the number of members to be sent to the one Parliament by each part of the United Kingdom; the system as it now exists was first settled by the Reform Act of 1832, and revised in that of 1867, which rearranged the representation more in conformity with the existing distribution of population. The constituent parts of the Parliament are the Sovereign, the House of Lords, and the House of Commons. The whole executive power is vested nominally in the Sovereign, but practically in a committee of ministers called the Cabinet; the Crown is also the fountain of justice and honour. The Sovereign summons and dissolves Parliament. The province of the Houses of Parliament is chiefly to legislate with the Crown; but they also review the Acts of the Executive, and can practically, by their censure, cause a change of the Ministry or Cabinet. The House of Lords exercises also judicial functions, since it forms the highest court of appeal in the realm. It consisted in 1882 of 502 members. The House of Commons numbers 639 members,¹ returned as follows by the 3 divisions of the United Kingdom.

<i>England and Wales.</i>		Members.
52 counties		187
195 cities and boroughs		284
3 universities		5
		476
<i>Scotland.</i>		
33 counties		32
22 cities and borough districts		26
4 universities		2
		60
<i>Ireland.</i>		
32 counties		64
31 cities and boroughs		37
1 university		2
		103

Thus in England the boroughs and cities preponderate.

The principal courts of law and equity in England hold their sittings in London. Twice a year judges from the courts go round the whole country on circuit, holding the *Assizes* (sittings) in the principal town of each county. The country is divided into eight circuits, called respectively the Home, Norfolk, Midland, Oxford, Western, Northern, North Wales, and South Wales. County courts decide minor cases. It is one of the chief offices of the *Sheriff* to carry out all judgments and orders of the courts of law.

27. The executive government of Ireland is vested in a Lord-Lieutenant, and the law is administered by a Lord Chancellor and twelve judges. An

¹ This is exclusive of the 19 representatives of 4 boroughs which have been disfranchised for corrupt practices, and of 8 boroughs in which the writs are suspended.

armed constabulary, however, is maintained. Scottish law differs in many particulars from that of England, as well as in its administration; the highest civil tribunal of Scotland, the Court of Session, has its seat at Edinburgh; the Circuit Courts of Justiciary, of which there are three—the North, West, and South—resemble the assizes of England.

The British army is small in comparison with the armies of continental states, and differs from these in so much that service in it is *voluntary*. It is supplemented by the militia and volunteer forces. The strength of the country lies in its navy, the finest in the world.

28. The British possessions in Europe are *Heligoland*, taken from the Danes in 1807, an islet a fifth of a square mile in area, off the mouth of the Elbe, with Friesland fisher inhabitants; the fortress of *Gibraltar* (Jebel-al-Tarik = Tarik's Mount), British since 1704, guarding the entrance of the Mediterranean; and the islands of *Malta* and *Gozo*, in the central Mediterranean, with Valetta (in Malta), now one of the strongest fortresses in the world.

2.—SCANDINAVIA.

1. **Sweden¹ and Norway.²**—The Scandinavian peninsula, the largest of Europe, shuts off the Baltic and its prolongation the Gulf of Bothnia on the east from the Atlantic on the west; for several hundreds of miles it is washed north-west and north by the Arctic Ocean; the Skager Rak, Kattegat, and the Sound, separate it from Denmark on the south. Its only landward frontier lies along the inhospitable lake region of northern Finland, where the Torneå river, at the head of the Gulf of Bothnia, and the Varanger Fiord on the Arctic coast, separate Sweden and Norway politically from northern Russia.

The length of the peninsula from north to south is nearly 1200 miles, or double that of Great Britain; its width at greatest 450 miles, and its area 294,000 square miles (172,000 in Sweden, 122,000 in Norway).

2. The general configuration of the peninsula—the lowland toward the Baltic forming a branch of the great European plain, the mountains and snow fields and glaciers towards the west, and its high deeply-fretted fiord coast on the Atlantic—has already been sketched in connection with the other great features of Europe.

The coasts of the Gulf of Bothnia are flat and sandy, covered with the soil brought down by the many streams, and the numerous islets are likewise low. From the Qvarken Islands northwards, however, the coast is partly low and sandy, partly marked by lines of cliffs fringed with rocky skärs or skerries, separated by narrow passages with intricate windings, rendering access tedious and difficult. The island of Gotland (= good land), 80 miles long, is a high cliff-walled terrace; the narrower Öland near the coast is also a tableland. Approaching the southmost plain of Skåne or Scania the rocky coast line ceases, the coasts appear low and sandy and free from islands. Turning north again, however, into the Kattegat and Skager Rak, and up into

¹ *Sverige* = Swedes' Kingdom.

² *Norge* = Northern Kingdom.

the fine fiord of Kristiania, the rocky islets, the high and broken coasts, again appear. The deep fiords of the west coast, filled with such beautifully clear water that one can see the bottom through a depth of 100 feet, penetrate into the land between the high mountain sides, sometimes presenting steep walls 1000 feet high, over which waterfalls leap into the abyss ; or glaciers descend nearly to the water's edge, or borders of dark pine forest ; while hundreds of romantic rocky islets stud the neighbouring sea. The *Sogne Fiord* (in 61° N.) is the largest of all, reaching eastward into the land more than 100 miles ; one of the many waterfalls, the *Vättisfos*, tumbles into this fiord.

3. Most important of the many lofty islands with which the Atlantic coast of Norway is studded, is the mountainous granitic group of the *Vesterålen* (68° to 69° N.), which runs out south-westward like a long promontory, broken through by narrow tortuous fissures. The largest of the group is *Hindöe*, 50 miles long ; and the five islands farthest to the south-west, enclosing the West-fiord, are the *Lofoten*, which sometimes give their name to the whole group, between two of which the famous *Moskø* or *Mael Strom* whirlpool is formed by the rushing tide pent up by the island barrier. The most notable of the islands farther north is that called *Mageröe*, 22 miles long, the northernmost land of Europe, inhabited by a few Lapp families, who can look out over the Arctic Sea from the summit of its northward cliff, the *North Cape*, 970 feet high. This is to be distinguished from the *Nord Kyn*, the northernmost point of the mainland, 40 miles farther east.

4. **Hydrography.**—The shallow Baltic on the east is frozen over during a considerable part of the year, closing all the ports of Sweden, and that of Kristiania in Norway, for at least four months. Entering the Skager Rak we find the sea-bed on its northern side sinking to a depth of more than 200 fathoms in a deep trough which skirts the southern promontory of Norway. All along the west coast, however, from lat. 60° to the North Cape, at some distance from the fiord mouths, there runs a chain of banks partly of sand, partly of rocks and stones, which form the great fishing grounds of the peninsula. Outside of these the Atlantic sinks to great depths. In contrast to the Baltic shores, all the western coast of Norway, from the Skager Rak to the North Cape and the Varanger Fiord, is kept free of ice all the year round by the warming waters of the Gulf Stream drift, borne towards them by the south-westerly winds.

5. Few countries are so copiously watered as this, with innumerable lesser and greater streams, or present such a multitude of large and small lakes at every elevation. The rivers are, for the most part, so broken by rapids and falls¹ that few of them can be rendered valuable for any traffic, and the navigation even of the larger lakes is intricate and dangerous. The streams, however, are turned to account in floating down the valuable timber of the forests, and their rapids give abundant mill power.

¹ Among the finest are the *Rjukand Fos*, or smoking fall, of the *Maan Elv*, in South Norway, one of the finest in Europe, and the *Vöring Fos*.

From the position of the mountain region on the west the river slope lies towards the south and east.

The largest river of Norway, the *Glommen* or *Stor-Elv* (great river), has a rapid course of about 300 miles southward to the Skager Rak, tumbling at a distance of 10 miles from the sea over its last fall, the *Sarpen Fos*, 60 feet high. Up to this it can be navigated by large boats. Next to its basin in Sweden comes that of the *Klar Elf*, the chief of those which feed Lake Wener, the largest water expanse of Scandinavia. This lake overflows to the Kattegat by the *Göta*, noted for its picturesque rapids and its larger falls, the *Rännum* and *Trolhätta*. By means of the *Trolhätta Canal* and its locks, designed by the English engineer Telford to avoid these falls, and cut in the granite rock, the navigation of the Göta forms part of a line of navigation which joins the Kattegat, through the great lakes, with the Baltic. Among the larger of those which flow south-eastward from the mountains to the northern part of the Baltic coast (from south to north) are the *Dal Elf*, with its east and west upper branches; the *Ijusne Elf*, *Indals Elf*, flowing through the large Stor Lake; *Angerman Elf*, one of the largest rivers of Sweden, navigable for a few miles from the Gulf of Bothnia; the *Umed*, with two splendid falls not far from its mouth; the *Skelleftea*, the *Pitea*, from Sulitelma (6150 ft.), the highest mountain of the northern dividing range; the *Luleå* and the *Torneå*, the lower half of which forms the boundary between Sweden and Russia. The only river of importance flowing to the Arctic Sea from Scandinavia is the *Tana*, which also forms part of the Russian frontier.

6. Lake *Wener*, more than 2000 square miles in area (or as big as the county of Northumberland) is nearly divided by peninsulas running out from its north and south shores. Its coasts are studded with islets, it is in many parts shallow, and strong wind gusts make its navigation difficult. Lake *Wetter*, about 25 miles south-east of the former, 70 miles long, has clear green water, surrounded by lofty unbroken shores. These lakes are respectively 150 and 300 feet above the Baltic. Lake *Mälär*, the intricate maze of waters next the Baltic coast, on the other hand, is scarcely 6 feet above the level of that sea; it is 81 miles long, and its shores are varied with cliffs and woods and sloping lawns or cultivated fields. The most important line of artificial navigation in the peninsula is that of the Göta Canal, before noticed, which unites the Göta river with Lakes Wener and Wetter.

7. **Climate.**—Reaching north and south through more than a thousand miles, the Scandinavian peninsula has a great range of climate from latitude alone. In the extreme south its days and nights correspond in duration to those of the north of England; towards the north the summer days and winter nights grow longer; at the Arctic circle the mid-winter day is scarcely lighted by the sun, and at midsummer the sun may be seen at midnight; at the North Cape there are nearly three months (May, June, July) of summer daylight, and an equally long winter night (November, December, January).

All the northern part of the land is held in the sway of frost and snow, and the streams are closed with ice, from September till June. Farther south, in the latitude of Stockholm, the winter frosts bind the rivers and lakes from December till April, and in the extreme south of Sweden only till *March*. Summer by contrast is hot, and the apparent change to this season

- from winter is very rapid, owing to the sudden disappearance of the snow, especially in the north. The two sides of the peninsula are, however, remarkably contrasted in climate, that facing the Atlantic having a foggy, rainy, and more equable one; the other, sloping to the Continent, having a drier climate, with great extremes. This cannot be better illustrated than by remembering that the Skager Rak in the south, lying within the extreme continental climate of the Baltic, is frozen in winter, while the North Cape, 1000 miles higher in latitude, is kept open and free of ice all through the year by the warm water carried against it by the prevailing south-westerly winds. On this account also the limit of perennial snow on the mountains reaches higher on the eastern or Continental than it does on the maritime side of Scandinavia. Even the western side of southern Sweden, next the Kattegat, has a milder and more fickle climate than the corresponding east coast on the Baltic.

8. **Products.**—Forests of pine and fir (beech and oak only in the far south) form the natural covering of all the lower lands of Scandinavia, and reach up to a considerable elevation in the mountains, higher also on the eastern than on the western side of the hills, corresponding to the snow-line.

North of 64°, however, on the greater elevations, the trees become stunted, and finally give place to scanty grasses, berry-bearing plants, mosses, and lichens. Above these, on the mountains, come the snow-fields with their dependent glaciers.

At the North Cape potatoes and cabbages can only be reared with care in enclosures. Rye will not ripen north of 66°. Between the 64th and 65th parallels oats seldom come to maturity, and this is the northerly limit of all orchard fruits, as well as of flax and hemp. Hops grow as far north as 62°. The 61st parallel may be said to separate the agricultural from the forest region of Scandinavia, all the lowland to the north of this being left for the most part under its natural woods. South of that line agriculture has now been widely extended, oats, barley, rye, and wheat being grown in sufficient quantity to be largely exported. The plain of *Skåne*, the southernmost promontory of Sweden, may be termed the granary of the country.

9. **Iron and copper and silver** are widely distributed in Scandinavia. Central Sweden has not far short of 200 iron mines, but the quantity produced is less than a twentieth of the yield of the British iron fields. The most famous mine of Sweden is that of *Dannemora* in Upsala, north of Stockholm, giving magnetic iron which is formed into the finest steel. The most productive copper mines are those of the *Dal valley* in Sweden, and of the *Kaafjord*, a branch of the Altenfjord in the north of Norway (70° N.) Silver is obtained in greatest quantity at *Sala* in Vestmanland, north-west of Stockholm.

10. **People.**—The people of the peninsula are of Germanic race, with the exception of the small number of Finns and the Lapps in the north. Population, 6,389,000 (Norway, 1,819,000; Sweden, 4,570,000).

The Northmen of Norway, of middle stature, strong, generally blonde-haired and blue-eyed, seamen by choice, have adopted the Danish as the language of the towns and of literature, its nearly-related Old Norse being banished to the outlying country districts and unfrequented fiords. The Finlanders of Finmark, on the north, and between the Glommen and Klar Elv in the south (*Kvænén* or *Kajanen*), few in numbers,¹ are darker than the Nor-

¹ 22,500 in Sweden and Norway.

wegians, but do not differ much in outward form ; they speak Finnish (a dialect of the Ural-Altaic family of languages) ; the *Lapps*¹ (who call themselves *Schmelads*) of the northern Arctic provinces, are little, yellow, thickset people, with small slit eyes, broad low brow, and sharp beardless chin, and have been kept separate as an inferior race by the Northerners.

The Swedes are also a Germanic people, tall and strong, but with more variety of characteristics than the Norwegians. The Swedish language, allied closely to Norse and Danish, appears in very many dialects.

11. Religion and Education.—Almost the whole population is Protestant, adhering to the Lutheran Church, members of which alone are permitted to hold public offices. Education is well advanced in both countries, public instruction being gratuitous and compulsory.

Sweden has the Universities of *Upsala* (1500 students),* which dates from 1477, and of *Lund* (550 students), founded in 1668, besides the many scientific and educational institutions of Stockholm. Norway has the University of *Christiania*, founded in 1811.

12. Industries.—In Norway by far the largest division of the inhabitants find employment in agriculture and in cattle-rearing (though only about one-thousandth part of the surface of the land is cultivable), or as seamen or fishers, or as woodcutters in the pine forests, so that only a very small proportion of the people, about a sixth, are dwellers in towns.

Agriculture, as we have seen, is not profitable except in the extreme south, and in the deep valleys ; cattle-rearing, however, is the industry of the higher valleys ; here each farmer has a *xæter* or summer pasture on the heights of the field, whither he repairs with his cattle, and where the animals grow fat, but they need to be kept indoors upon hay and moss during the winter.

The fisheries give occupation and food to a large part of the population of Norway. Herring shoals come twice a year to the coast, in winter and summer, and at the latter season great numbers are netted. Soon after New Year the cod-fishing begins, the *Lofoten Isles* being one of its greatest centres. In this about 4500 boats with 25,000 men, besides about 250 "*yaegts*" or storing ships, are employed. The two most frequent trees, the pine and the birch, are indispensable to the Norwegian. Of these he builds houses, churches, bridges, sledges, carioles, and boats. The birch twigs also give winter food for the cattle, and are useful in sweeping. The forests also supply timber for export, the most important outlets of the forests being the rivers which flow to the Skager Rak.

13. Kristiania (pop. 119,000) is the capital and seat of Government, on its fiord reaching north from the Skager Rack ; *Bergen*, on the Atlantic coast, the commercial town of Norway, is the only other important centre of population in the country.

Trondhjem, *Stavanger*, and *Kristianssand*, on the same coast, are seaport towns, trading in fish, timber, and copper. *Drammen*, on a branch of the

¹ 24,000 in Sweden and Norway.

Kristiania fiord, is the chief timber port. *Tromsø* and *Hammerfest* are remarkable as the most northerly ports of the world that are open to navigation all the year round.

14. In Sweden about 87 per cent of the population is rural, employed mainly in the agricultural region of the south, in the central mining regions, and in the industries of the forests farther north. Manufactures of various kinds, chiefly of cotton and woollen spinning, are, however, extending in Sweden.

15. The trade of the country centres in the capital, *Stockholm* (pop. 170,000), advantageously placed for commerce in the island of Lake Mälär, where its channels open to the Baltic through a maze of rocks and tree-covered islets, and at *Göteborg* (pop. 75,000) on the Kattegat. These are the only large towns of the country.

Malmö, on the Sound, opposite Copenhagen, is the outlet of the corn granary of the southern plain; *Norrköping*, on an inlet of the Baltic, after Stockholm, is the busiest manufacturing town of Sweden, its mills being driven by the rapids of the Motala; *Gefle* lies north of Stockholm, and is second only to it as a seaport on the Baltic side of the country; and *Karlskrona*, on the south coast, is the fortified naval arsenal and head-quarters of the fleet of Sweden.

Within recent years a network of railways has been formed over southern Sweden and Norway, connecting the capital towns with the ports of Göteborg, Malmö, and many other points.

16. **Government.**—After the crisis of European affairs brought about by Napoleon's wars, Denmark, we may remember, lost her hold over Norway, which had been united to it for more than four centuries, and that country was made over to Sweden in exchange for Finland, which then passed under Russian sway. Norway, however, though united with Sweden under one king, retains its independent constitution.

17. The constitution of Sweden dates from 1809, but in 1866, when the separate meetings of the four estates—nobles, clergy, burghers, and peasants—were done away, the legislative system was much modified, and it now approximates to that of Britain. The executive power is vested in the king, acting under the advice of a Council of State; the legislative in the two Chambers of the *Diet*, both of which are elected by the people—the first for nine years from proprietors, the second for three years from a lower class. The administration of justice is entirely independent of the Government.

18. Norway is much more democratic; no privilege of birth or hereditary nobility has been recognised since 1821. There the Chambers of the "*Storting*," or Great Court, represent the sovereign will of the people, and the king has only a limited power of veto on the laws passed by this assembly.

19. For administrative purposes Sweden is divided into twenty-five *län* or governments, grouped within three great regions of the country—*Svealand*, or Svea Rike, the old kingdom of Sweden, in the

centre ; *Gothland*, or Göta Rike, in the south ; and *Norrland*=north land. Norway is divided into twenty *amts* or bailiwicks, grouped in the six dioceses or *stifts*, of *Kristiania*, *Hamar*, *Kristiansand*, *Bergen*, *Trondhjem*, and *Tromsø*.

Sweden no longer possesses a colony since the island of St. Bartholomew in the West Indies, ceded by France, in 1784, has been restored to that power.

3.—DENMARK.

1. The Danish territory includes the northern tract of the Cimbrian peninsula or Jutland, and the archipelago of islands which lies east of it ; besides the widely-separated Farøe islands and Iceland, belonging also to Europe, and Danish Greenland, which must be described along with the American continent.

The home portion of the territory, that which lies south of the Scandinavian peninsula, has an area of 14,800 square miles, which does not exceed the half that of Scotland or Ireland. Its coasts are washed by shallow seas : by the North Sea on the west, the Skager Rak and the Kattegat on the north and north-east, the Sound and Belts and the Baltic on the east ; the only land frontier being that which crosses the peninsula, separating Jutland from the German province of Schleswig.

Two-thirds of the area is formed by the peninsula. The islands form three main groups—(1) Those of *Fyen* or *Fünen*, with its satellites *Langeland*, *Arrø*, and *Taaasinge*, nearest the peninsula, separated by the Little Belt ; (2) of *Sjælland* or *Zealand*, with *Möen*, *Falster* and *Laaland*, *Amager* and *Saltholm*, between the Great Belt and the Sound ; and (3) *Bornholm*, in the Baltic. Most apart lie the islands of *Læsø* and *Anholt* on the Kattegat, and of *Samsø* between Zealand and Jutland.

2. Physical Features.—The sea round all the coasts is shallow and difficult of approach. The western shore of Jutland especially is one of the most dangerous in the world, and is so deficient in harbours and anchorage-ground as to be called the “iron coast” by the sailors.

The most frequented highway to the Baltic leads from the Kattegat through the well buoyed and lighted *Sound*, and in this, opposite Copenhagen, the *Konge Dybet*, or King's Deep, afford the best and safest anchorage in all the Danish coast. The *Great and Little Belts* are also navigable, but the channel through them winds about so much that the passage is double the length of that through the Sound. Among the many inlets of the coasts, the *Limfjord*, which reaches across and isolates the northern part of Jutland, is the most remarkable. It opens by a narrow channel to the Kattegat at *Hals*, and on the opposite side by the *Agger Minde* to the North Sea, which broke through into the fjord during a storm in 1825. From its shallowness it is only passable by flat-bottomed boats called “Kaage.”

3. The whole of this home country of Denmark, except the island of Bornholm, is so low and flat that an elevation of 100 feet would be noticed as a marked rise.

The very highest points of all are the *Eiersbænehöi* and the *Himmelsberg*, two hills in Eastern Jutland, the former rising 565, the latter only 560 feet above the sea. *Bornholm* is an extension of the granite mass of South Sweden, presenting steep slopes to the sea. The greater part of the other Danish islands and Jutland are, however, of chalk formation, which, as in England, occasionally appears in sea cliffs, the most notable being those called *Stevens Klint*, on the eastern coast of Zealand. Here, as in Sweden, erratic blocks occur, the largest being that called the Lady's Rock, in Fünen (128 feet in circumference, 42 feet high), which, according to the legend, was thrown from Langeland to Fünen by a noble lady. *Dunes* of drift sand extend almost continuously along the west coast protecting it from the sea, from the *Skaw* or horn of Skagen in the extreme north of Jutland, to the *Blaavands Huk*, 200 miles south.

4. **Climate and Products.**—Denmark, surrounded by the sea, has a climate more humid, milder, and more equable than that of Germany to the south of it, rain and fog and change being characteristic; but it is more excessive or continental than that of the parts of England and Scotland in the same latitude, as is shown by the winter freezing of the Baltic and its Sounds. The summers are occasionally very hot. The contrast of its east and west sides is as remarkable as that of the Scandinavian peninsula north of it—the west coast remaining ice-free during the year. West winds prevail, as in Britain, during the greater part of the year, excepting in spring, when cold dry east and north-west winds (*skarv*) set in.

The damp climate of Denmark supplies the country with many brooks, but there are no important rivers. Lakes, however, are numerous in east Jutland and on the islands.

5. The more hilly eastern belt of Jutland is a fertile corn-land, interspersed with beech woods. The centre and west of the peninsula, from north to south, presents bare sandy heaths, with here and there "holms" or islands of more cultivable land. Zealand and Fünen have little wood, but are well supplied with turf fuel, and possess much fertile corn-growing land. Laaland grows excellent wheat, and has fine beech and oak woods, and Falster is called the orchard of Denmark. The central heights of Bornholm are heath-covered, but elsewhere the land is tolerably fertile. This is the only part of the home country of Denmark that has any mineral resources at all, yielding a little coal and the porcelain clay which is used at Copenhagen.

6. **People.**—The inhabitants of Jutland and the islands number nearly 2 millions (1880, 1,968,500). They belong to the Scandinavian branch of the Teutonic peoples, and speak the Danish form of the old Norse, which was fixed in writing about the time of the Reformation.

Three dialects are, however, to be distinguished—(1) The Zealandic, closest to the written tongue; (2) the Jutic, which differs very much from the written language, and which, in the west, becomes very like English; (3) the dialect of Bornholm, which is like that of Sweden.

7. Religion and Education.—Since the Reformation the Danes have been adherents of the Evangelic Lutheran Church. The kingdom is divided into seven bishoprics. Education is well advanced, and there are very few people in the country who can neither read nor write.

Copenhagen has a university and Royal library. Sorø academy, in central Zealand, ranks next as a school of learning.

8. Industries.—Denmark is essentially an agricultural country, nearly a third of its surface being fertile and cultivable, so that about 60 per cent of its inhabitants find their occupation in tilling the soil—oats, barley, rye, and wheat being the chief crops. The peninsula of Jutland, with its uncultivable heaths and marsh lands in the west, is the chief pastoral region of Denmark, supporting large herds of cattle, horses, and sheep. All the inhabitants of the sandy west coast are fishers, the flounder fisheries of the *Skaw* being the most important of all. Herring and seals are taken in the Belts, in some parts of which also large numbers of porpoises are trapped as their shoals are passing in or out of the Baltic.

Denmark is not to any considerable extent a manufacturing country, for both water power and coal for steam machinery are wanting; but rough woollen cloth is woven by hand in many of the country houses, and the making of wooden shoes employs many hands in the wooded parts of the country. Neither is Denmark a trading country, only about 5 per cent of its inhabitants being engaged in commerce. On this account but few canals have been constructed. The roads in Zealand are good, but in Jutland very bad. In comparison to its area, however, Denmark is better provided with railways than even the British Isles.

9. Chief Towns.—*Copenhagen*¹ (pop. 274,000), the capital, most advantageously placed beside the best anchorage and across the best harbour of the most frequented passage to the Baltic, is the only large town of Denmark.

It embraces within it more than a tenth of all the urban population of the country, and is the centre of education, art, manufactures, and trade, besides being the arsenal of the country. The city lies across the harbour formed by the channel between the mainland of Zealand and its satellite of Amager, and is strongly fortified. *Odense*,² in Fünen, connected by canal with its fiord, is the largest provincial town of Denmark, and the oldest one in the country. *Aarhus*, on the east coast of Jutland, and *Aalborg*, on the Liim fiord, are the chief ports of the peninsula. At *Elsinore* (Helsingör), on the narrowest part of the Sound, vessels formerly stopped to pay the "Sound dues" collected by the Danish Government, before entering the Baltic; these, however, were abolished by treaty in 1857. Beside this is the strong stone fortress of *Kronborg*, the guns of which command the passage.

¹ Dan. Kjöbenhavn = Merchants' Harbour.

² Odin's Oe = Odin's Island.

10. **Government.**—The present constitution of Denmark dates from 1866. The executive power is vested in the King and his ministers, the legislative in the *Rigsdag* or Diet, comprising the *Landsthing* or Upper House, and the *Folksthing* or House of Commons, partly nominated by the crown, partly elected, indirectly, by the people.

For administrative purposes the country is divided into 22 *aemter*, or districts—12 on the islands, and 10 in Jutland.

FARÖE ISLANDS.

11. The *Faröer* (probably meaning sheep islands, from *Faar*, a sheep), out in the Atlantic, between Norway and Iceland, 200 miles north of Cape Wrath in Scotland, belonged at one time to Norway, came with that country to the Danish crown in 1397, and remained in its possession after Norway was separated. They consist of 25 irregularly-shaped mountainous islets of trap and basalt rocks, the coasts of which descend steeply by jagged cliffs to the narrow channels which separate them, and through which the tidal currents rush. Together they occupy nearly 500 square miles, the largest of them, Stromö, being 30 miles in length.

The highest point, named *Slattaretindur*, occurs in the island of Österö, and rises 2792 feet above the sea. Their climate is thoroughly maritime, with clouded skies and frequent changes; though they are in such a high latitude (62°), snow seldom lies for more than a day or two in winter. The heavy storms which sweep over the islands prevent the growth of trees; barley does not always ripen. The general aspect of the islands is dull and bare, green only when the soil happens to be a few feet thick. The islanders, nearly 10,000 in number, living on 17 of the islands, are Norse colonists, speaking the old Scandinavian dialect; their food is given chiefly by the flocks of sheep; ponies run half-wild. Many of the islanders live by climbing the dangerous cliffs for the eggs and feathers of the multitudes of sea birds that nest on them; others are fishers, chiefly of cod and the round-headed whale, called the *Grindhval* by the islanders, which comes in large "schools" or herds.

The Faröe Islands send two deputies to the Danish *Rigsdag*, and form part of the bishopric of Iceland. The amtman or governor resides at *Thorshavn* on Stromö.

ICELAND.

12. The interesting island of Iceland lies on the border of the Arctic Circle nearer Greenland than Europe, and might be considered part of America; but as a Danish province it is generally grouped with the European countries. It is the second largest of the European islands, nearly half as large as Great Britain, and considerably larger than Ireland, covering about 38,500 square miles. Its general outline, cut into by fiords, recalls that of Norway or the

coast of Scotland ; the fiords of the south and east coast are comparatively small, those on the north and west run deep into the land ; there the *Huna Floi* and *Breithi fiord*, filled with skerries, almost shut off the large north-western peninsula, and the *Faxa fiord* forms a great bay.

Almost all the interior is high and mountainous ; cliffs of bare trap rocks form the eastern and western halves, a belt of volcanic island heights lying between, from south to north. The three-fourths of the island which are mountainous rise to an average elevation of from 1600 to 3000 feet, and as perennial snow lies at heights of 3000 feet in the south, the greater part is at too high an elevation to allow of agriculture. About a ninth part of the whole island is covered with *Jökulls* or glacier fields, an eighteenth part with lava beds.

On the south of the volcanic central area rises the huge mass, called the *Vatna* or *Klofa Jökull*, covering more than 3000 square miles (or as large in breadth as between London and Brighton), on the sea border of which rises *Oræfa*¹ (6429 ft.), the highest point of the island. Towards the south-west stands the devastating volcano of *Hekla*² (5095 ft.)

13. Only a few moist tracts along the south and west coasts, and a few grassy dales in the south, are in any degree capable of cultivation ; elsewhere, mosses, snow fields, and volcanic ashes cover the land. Scarcely a tree is to be seen, and though oats and barley will sometimes grow, the chance of their ripening is so precarious that it becomes more expensive to cultivate than to import grain.

14. In the south of Iceland the longest day lasts 20 hours, the shortest 4 ; but in the extreme north the sun never sets for a week at midsummer, nor rises for a like time in midwinter. The climate in the south, where the warm Atlantic current reaches the shores, is wet, foggy, and variable. The winter, though long, is not very severe, the summer cool—June, July, and August being the only months in which snow does not fall. The north and north-east coasts, which are washed by the cold East-Greenland current, contrast with the southern and south-western. This stream carries drift-ice through the strait between Iceland and Greenland at all times of the year, and in winter this frequently extends so as to blockade all the northern shores : upon these, however, the ice casts an abundance of drift-wood from the Siberian seas, valued as fuel by the islanders.

The streams are generally short torrents, but lakes are frequent, and in some cases of great depth ; *Thingvall Vatn* in the south, and *My Vatn* (Midge lake) in the north, are the largest. In the volcanic region the hot springs and *geysers*³ are remarkable features.

15. The Icelanders, 71,000 in number, are the descendants of the old Norwegian colonists, and are distinguished for their honesty and love of education ; notwithstanding their poverty and adverse circumstances, it is rare to find an Icelander who cannot read and write. They are all Protestants, belonging to the Lutheran Church.

Sheep, cattle, and ponies form the chief wealth of the land ; in spring

¹ Oræfa = "wilderness."

² Hekla or Hekluhfjalla = "mantle mountain."

³ From ad geysa = breaking up suddenly.

nearly all the men go off to the south coast for three months to the cod fisheries on the banks, to which French and Dutch vessels also come at this season. The eider ducks and seals, along the coast, are taken in large numbers. Knitting of stockings and gloves is the domestic industry of the island.

Among the minerals, *Surtar brand*, a kind of brown coal found beneath the lava beds, is used for fuel; sulphur is abundant; but Iceland spar is the only mineral exported.

16. Iceland has its own constitution and administration under charter of 1874, the legislative power being vested in the *Althing* of 30 members elected by the people, and 6 nominated by the King of Denmark.

A minister for Iceland is at the head of the administration, while the highest local authority rests with the Governor or *Stifts amtman*, who resides at *Reykjavik* (2000). The island is divided into three amts or provinces, of *Nordlendinga*, the north; *Sudlendinga*, the south; and *Westyrðinga*, the west, subdivided into *sysels* or counties.

4.—GERMAN EMPIRE (*Das Deutsche¹ Reich*).

1. This combination of Germanic States extends now from the outliers of the Alps and the Bohemian mountains on the south to the Baltic on the north; and from the borders of France, Belgium, and Holland, on the west, to those of Russia on the east; the greatest distance across it from east to west and from north to south being about 500 miles. The area amounts to 208,500 square miles, or somewhat less than four times that of England. The mountains on the south and the sea on the north give natural frontiers for the most part, but west and east artificial boundaries are marked out, which correspond only in a few parts with the ethnographic limits of Germanic and Romanic peoples on the one side, and Germanic and Slavonic on the other.

2. **Relief.**—The country lies partly on the plateau lands and minor ranges which extend northward from the Alps, partly on the plain of Northern Europe, and this gives the broad distinction between Upper and Lower Germany (*Ober and Nieder Deutschland*).

The most remarkable features of the coast are the expansions of the river mouths in the Baltic; the lagoons called the *Kurische Haff*, *Frische Haff*, and *Stettiner Haff*; the estuaries of the *Elbe* and *Weser*; and the rounded inlets of *Jade Bay* and the *Ems* mouth, on the North Sea.

3. **Rivers.**—By far the greater part of the country is drained northwards to the Baltic and the North Sea by its navigable highways the *Vistula*, *Oder*, *Elbe*, *Weser*, and *Rhine*, which have been already noticed: the south-eastern corner alone belongs to the upper basin of the *Danube* flowing towards the Black Sea.

¹ From *diet* or *diota*, "belonging to the people." The Latin name *Germania*, from which the modern derives, does not seem to have been used by the Germanic tribes themselves, but may have been borrowed by the Romans from the Celtic word "*gairm*" = a loud cry, referring to the war shout with which they began an attack.

4. Climate.—The climate of Germany presents less diversity than might be inferred from the difference of latitude between its northern and southern borders, for the greater strength of sunlight and heat received in the south is compensated to some extent by the rise of the land in that direction from the Baltic plain. The average temperature of central Germany may be said to be the same as that of southern England, but it lies between much wider extremes, the heat in summer being nearly 10° greater than in England, and the winter cold falling nearly the same amount lower, so that at Berlin the hackney coaches are converted for the time into sledges ; but the climate graduates from an almost maritime one in the west to a thoroughly continental one in the east.

The Elbe at Hamburg is only closed by ice for a short time in severe winters, but the Vistula is sealed up from December till the beginning of March every year. The swallows appear in western Germany four weeks sooner than in eastern. Westerly winds prevail through the greater part of the year, as in Britain ; cold dry east winds in spring. Rain falls at all seasons, but most in summer (about 20 inches in Berlin), and more towards the west or Atlantic side of the country than towards the east.

5. Products.—Following this distribution of climate, the forests which still cover a great part of Germany, and form a feature of its landscapes, are chiefly of the hardier pines in the north and east, and of deciduous trees in the south and west. About 61 per cent of the surface of the empire is suitable for cultivation, the forests occupy 25 per cent, and the uncultivable moors and mountain tracks only 8 per cent. Rye, oats, potatoes, wheat, and barley, are the chief grain crops ; flax is grown in all parts, tobacco in the upper valleys of the Rhine and Oder ; the middle valleys and slopes of the Rhine and Main are noted for their vineyards ; north Germany is noted for its horses and cattle, the central districts of the northern lowland for sheep.

The mineral products of Germany are widely spread. By far the most important coal and iron fields of the empire are those of the valley of the Ruhr, a small tributary of the lower Rhine, on its right bank ; next in point of productiveness stand those of the upper valleys of the Oder in Silesia ; third, those of the valley of the Saar, a tributary of the Moselle, from the Vosges Mountains, on the left of the Rhine basin. The Harz Mountains are especially noted for their wealth of silver, lead, copper, and zinc ; the Baltic coasts for their amber.

6. People.—The whole population of the German Empire is over 45 millions, or a quarter more than that of the British Isles. The whole of the *German people* of Western Europe are not included within the boundaries of the empire (a considerable portion remaining in Austria and Switzerland), but the political boundaries reach beyond the borders of the German area proper, on several sides. Along the eastern frontier and in Lusatia nearly 3 millions of Slavonic *Lithuanians*, *Poles*, *Wends*, and *Czechs*, are included ; in the north about 150,000 *Danes*, belonging to the Scandinavian branch of the German family, live within the boundary of the empire ; and in the west over 200,000 Romanic *French* and *Walloons*.

The natural division of the country into highland and plain, Upper and Lower Germany, also marks out broadly two regions which differ in dialect. The Upper German, from which the so-called *Hoch deutsch*, the written language, has come, is distinguished by the use of the article *das*; the Lower or *Platt deutsch*, which is giving way more and more to the other, by the article *dat*.

7. Education, Religion.—It has already been noticed that in point of education and general culture the Germans are in advance of all the world; theirs is, above all, the nation of earnest thinkers. There are no fewer than twenty-one universities in the empire (at *Königsberg, Berlin, Breslau, Greifswald* (in Pomerania, south-east of Stralsund), *Kiel, Halle, Göttingen, Münster, Bonn, Marburg, Rostock, Giessen, Jena, Leipzig, Heidelberg, Freiburg, Strassburg, Tübingen, Munich, Erlangen, and Würzburg*), with many other academies for special branches—art, military, forest, agriculture, and navigation.

8. Protestantism (62 per cent) prevails in all parts of Germany excepting in the south-west; Roman Catholics, most numerous in South Germany, form 36 per cent of the population; Jews about 1 per cent.

9. Constitution of the Empire.—The constitution of the German Empire dates from 1871, and by its terms the States which comprise it are united for the protection of the realm and the care and welfare of the German people. The supreme direction of the military and political affairs of the empire is vested in the King of Prussia, controlled by the *Bundesrath*, or Federal Council, formed of the representatives of the States constituting the empire, and the *Reichstag*, or Diet of the Realm, elected by universal suffrage.

The States of the empire are as follows :—

	Area. English Sq. Miles.	Population. Dec. 1, 1890.
Kingdom of Prussia	134,178	27,251,067
" Bavaria	29,292	5,271,516
" Saxony	5,789	2,973,220
" Württemberg	7,531	1,970,132
Grand-Duchy of Baden	5,828	1,570,189
" Hesse	2,965	936,944
" Mecklenburg Schwerin	5,137	576,827
" " Strelitz	1,131	100,269
" Saxe-Weimar	1,404	309,503
" Oldenburg	2,471	337,454
Duchy of Brunswick	1,425	349,429
" Saxe Meiningen	953	207,147
" Saxe Altenburg	510	155,062
" Saxe Coburg-Gotha	760	194,479
" Anhalt	906	232,747
Principality of Schwarzburg Rudolstadt	364	80,149
" Schwarzburg Sondershausen	333	71,083
Carry forward	200,977	42,587,217

	Area. English Sq. Miles.	Population. Dec. 1, 1890.
Brought forward	200,977	42,587,217
Principality of Waldeck	433	56,548
" Reuss (elder line)	122	50,782
" Reuss (younger line)	320	101,265
" Schaumburg Lippe	171	35,332
" Lippe	438	120,214
Free town of Lübeck	109	63,571
" Bremen	97	156,229
" Hamburg	158	454,041
Reichsland, or Imperial territory of Alsace- Lorraine (Elsass-Lothringen)	5,603	1,571,971
Total	208,425	45,194,177

10. The States of the Empire, together with *Luxemburg*, are combined for the furtherance of their trade and commerce in a Customs' League or *Zollverein*, the administration of which is merged in the Reichstag, or Diet of the Empire, at Berlin. The customs' receipts, together with excise and stamp duties, and the profits from telegraphs and the post-office are paid into the Imperial Exchequer, to be applied to the common expenses of the Empire. Upwards of 22,000 miles of railway (1 mile to each $9\frac{1}{2}$ of area) facilitate communication over the empire, and nearly 5000 ships, of over a million tons burthen, belong to the ports. Each state, however, retains its own independent internal administration, and on this account it is necessary to notice the more important of them separately.

NORTH GERMANY.

PRUSSIA.

11. PRUSSIA,¹ the growth of which state has been rapid since Frederick the Great acquired Silesia (1742), now extends uninterruptedly from the frontiers of Holland and Belgium on the west across to Russian Poland; the incorporation of Schleswig-Holstein, taken from Denmark in 1865, and of Hanover in 1866, united the formerly separate eastern and western portions of the kingdom. Prussia lies for the most part in the northern lowland of Germany, and embraces two-thirds of the entire area of the empire; its population (27 millions) is also considerably more than half of that of the whole empire.

12. The crown of Prussia is hereditary in the male line, and in the exercise of executive government the king is assisted by a council of ministers.

The legislative authority is shared by the king with a representative assembly composed of two Chambers, the *Herrenhaus* (or House of Lords) and the *Abgeordnetenhaus* (or Chamber of Deputies).

Prussia is divided administratively into the thirteen provinces of *East* and

¹ Named from the Pruzi or Borussi, the ancient inhabitants of Prussia proper, between the lower Vistula and Niemen rivers.

West Prussia, Brandenburg, Pomerania, Posen, and Silesia, in the east; *Saxony*, central; *Schleswig-Holstein*, the southern part of the peninsula between the Baltic and the North Sea; *Hanover, Westphalia, Rhineland* or *Rhenish Prussia*, and *Hesse-Nassau*, in the west; *Hohenzollern*, a detached territory in the south.

13. By far the most important centre of population is the city of *Berlin* (1,122,000), the capital both of the empire and of the kingdom of Prussia. The growth of this city round the islets of the Spree, on the sandy plain of Brandenburg, is comparatively modern, and at first sight its situation seems to present no natural advantages. But its position midway between the natural highways of the Oder leading to the Baltic, and the Elbe to the North Sea, and the channels which almost unite there across the plain, give it great natural facilities of communication with widely separated regions. It is now a great railway centre, and besides its attraction as the seat of government and of the court, and its university and schools, it has important manufactures of cotton and linen, and is famous for iron-casting and porcelain.

The great manufacturing districts of Prussia, as of England, are those of its coal and iron fields, in Silesia and Rhenish Prussia. *Breslau* (pop. 272,000), on the Oder, the capital of the mining districts of Silesia, has grown to be the second town of the kingdom, carrying on very extensive manufactures and a great trade by river and railway. It is also the emporium of the flax-growing district of Silesia. About the Rhenish coalfields, which yield half the supply of the kingdom, stand the manufacturing and trading towns of *Cologne* (pop. 155,000), *Aachen* or *Aix*, *Barmen*, *Düsseldorf*, *Elberfeld*, *Crefeld*, and *Dortmund*, spinning cotton, wool, linen, and silk; and the famous iron and steel works of *Solingen* and *Essen*, where Krupp's steel guns are made. *Magdeburg*, on the Elbe, and *Cassel*, on the Fulda, are the great manufacturing and trading towns of central Prussia. Much of the internal trade of Germany is still carried on at great annual fairs, and in this respect the two *Frankforts* (on the Main to the west, and on the Oder to the east) hold the most important place. *Hanover*, on the Leine, is the point of exchange of the mineral products of the Harz for the goods which come in by *Bremen* on the Weser, and has besides important manufactures of its own.

The chief ports belonging to Prussia are the Baltic ones—*Königsberg*, *Danzig*, *Stettin*, *Stralsund*, *Memel*, *Rostock*, *Wismar*, and *Kiel*, on the Baltic; *Altona*, on the Elbe, next Hamburg. *Posen*, on the Warthe, was the ancient capital of Poland, and is the most important fortress towards the Russian frontier. *Wiesbaden* is the most important and the oldest of the watering-places which have grown up round the mineral springs of Nassau. *Eisleben*, where Luther was born, and *Erfurt*, where he resided, both in Prussian Saxony, are notable points in connection with the history of the Reformation in Germany.

SAXONY.

14. The kingdom of SAXONY lies along the northern slope of the Erz Gebirge, which divide it from Bohemia. The river Elbe breaks through these mountains into Saxony by the picturesque wooded gorges known as Saxon Switzerland, and flows on north-

westwards as the great highway and outlet of the country. The products and manufactures of busy Saxony are very varied. Its mountains are clothed with woods, and are rich in iron, lead, copper, silver, and coal; its porcelain clay is the best in Europe; its sheep are celebrated for their wool; its cattle and horses are numerous; and its soil is cultivated with great care.

15. *Dresden* (pop. 220,000), its capital, finely placed on the Elbe, famous for its art treasures, has also many varied manufactures.

So-called "Dresden china" is made for the most part at *Meissen*, 15 miles north-west of Dresden. *Leipzig* (pop. 210,000) is not only the seat of a famous university (second in the Empire) and the great book market of Germany, but has one of the largest annual fairs in the world, to which merchants come from all parts of the earth, even from America and China. *Chemnitz* and *Zwickau*, beside the Saxon coalfield, are the great woollen and machine-manufacturing towns of the kingdom. *Freiberg* is famed for its school of mines.

16. The present constitution of Saxony dates from 1831. The king holds the executive power, and shares the legislative with a parliament of two chambers, the upper composed of princes, barons, burgomasters, and deputies from the University of Leipzig and from five collegiate institutions; the lower, of deputies from the landed proprietors, manufacturers, merchants, towns, and villagers.

The kingdom is divided into the four provinces (*Kreis-Hauptmannschaften*) of *Dresden*, *Leipzig*, *Bautzen*, and *Zwickau*.

SMALLER STATES OF NORTH GERMANY.

17. All the smaller states of central and northern Germany—the Grand-Duchies of Hesse-Darmstadt, Mecklenburg, Saxe-Weimar, and Oldenburg; the Duchies of Brunswick, Saxe-Altenburg, Saxe Coburg-Gotha, and Anhalt (Dessau-Köthen); and the Principalities of Schwarzburg, Waldeck, Reuss, and Lippe—are little constitutional and hereditary monarchies, in each of which the legislative power is vested in a diet or parliament. In Mecklenburg Schwerin and Strelitz alone, the diet is composed of the equestrian order and the burghers, the peasantry being unrepresented.

These little states present few features that require notice. Mecklenburg-Schwerin (5137 square miles) is the largest of the northern Grand-Duchies; Reuss senior (122 square miles) the smallest of the principalities. *Brunswick*, on the Ocker, a tributary of the Weser, between Magdeburg and Hanover, is the largest town of these minor states. *Mainz* (or Mayence), in Hesse, at the confluence of the Rhine and Main, is the strongest fortress in Germany. *Gotha* has the most important geographical establishment in the world.

18. HAMBURG (348,000), BREMEN, and LÜBECK, the remaining free Hanse¹ towns, are republics, each governed by a senate and

¹ The Hansa or League of the North German towns was the first trade-union of Europe, and dates from the thirteenth century. At one time it included 85 towns, and had several foreign factories.

house of burghesses. Each of them has a small territory besides that occupied by the city.

They are the great gates of the external commerce of Germany, and from this have also become important centres for the preparation of foreign products, and of the necessities of trading (tobacco, sugar-refining, cotton-spinning, shipbuilding). Besides the traffic brought to Hamburg and Bremen by their rivers, all the railways of the north-west converge towards them, and through them a stream of emigration constantly flows to America. More than 5000 vessels come to Hamburg in the year; nearly 3000 to Bremen or its port of *Bremerhaven*.

SOUTH GERMANY.

BAVARIA.¹

19. The kingdom of Bavaria (29,300 square miles), about the same size as Scotland, lies on the plateau lands which extend north from the Alps to the *Rhine* and *Fichtel Gebirge*, and eastward to the height of the *Böhmer Wald*. All the south lies in the basin of the Danube, flowing east; all the north of the country in that of the Main, flowing west to join the Rhine. The detached Rhenish palatinate lies west of the Rhine, partly on the heights of the *Hardt*, partly on the low valley of the river.

Woods occupy 34 per cent of the surface; cultivated land 41 per cent. Iron, coal, graphite, and kaolin (from the *Böhmer Wald*), and lithographic stone (from *Solenhofen*, in North Bavaria) are the most important minerals. Its population of 5 millions is two-thirds Roman Catholic, one-third Protestant.

20. *Munich* (München), the capital (229,000), stands in the midst of a bare elevated plain on the left bank of the Isar, 1700 feet above sea-level, but has risen to importance as the central point of the great grain-growing plateau of southern Bavaria. It is the great corn dépôt of the country, and the place of manufacture of its favourite beer, the national beverage. In recent times it has become celebrated as a seat of the fine arts and for its splendid buildings. Munich, Erlangen, and Würzburg, are the seats of universities.

Ancient *Nürnberg* (Norimberga), with its double line of walls, where watches, first called Nürnberg eggs, were invented, is the great seat of industry and commerce in the north of Bavaria, exporting toys which go to all parts of the world. It stands on the Ludwigs Canal, the most important one in the kingdom, uniting the navigable tributaries of the Rhine and Danube.

Augsburg (Augusta Vindelicorum), on the Lech, north-west of Munich, where the Protestants presented the Confession of Faith to Charles V., is a chief centre of Bavarian trade and exchange. *Würzburg*, on the Main, is the old capital of Franconia, the district which was peopled by colonies of Franks in the sixth century.

¹ Bayern (Lat. *Boiaria*, from the old Germanic people *Boioarii*).

Speyer or *Spire* and the fortress of *Landau* are also important places in the palatinate.

21. The constitution of Bavaria dates from 1818. The king has the executive power; the legislative functions are performed by the Crown and the Upper and Lower Houses of Parliament.

The provincial divisions of the country are *Upper and Lower Bavaria* in the south-east; *Swabia*¹ in the south-west; Upper, Middle, and Lower *Franconia* and the *Bavarian Palatinate* in the north; besides the *Rhenish Palatinate*,² lying west of the Rhine between Hesse and Lorraine.

WÜRTENBERG.

22. The little kingdom of Württemberg (7500 square miles) is a hilly country, averaging 1500 feet above the sea, well watered by the system of the *Neckar*, a tributary of the Rhine. The *Swabian Jura* or *Bauhe Alp* rises in the south-east, the *Schwarzwald* in the west. About 30 per cent of the surface is wooded; elsewhere agriculture is carefully prosecuted. The vineyards, especially of the Neckar valley, give excellent wine. Iron and salt are the chief minerals.

The manufactures of the country are considerable; those of linen, cotton, wool, silk, paper, tobacco, beer, and iron-work are the chief; and the external trade in timber is large. The book trade of the country stands next to that of Leipzig and Berlin, this centres in the capital, *Stuttgart* (117,000), where Hegel was born, and where Schiller spent his youth. The fortress of *Ulm*, on the Danube, where it leaves Württemberg, has a large transit trade. *Heilbronn* is another important trading place. *Tübingen* is the university town. Like Bavaria, Württemberg is a constitutional monarchy.

23. The little territory belonging to the house of *Hohenzollern*, which runs into Württemberg on the south, fell by inheritance to the King of Prussia in 1849.

BADEN.

24. BADEN, the largest of the Grand-Duchies (5800 square miles, one-sixth less than Yorkshire), occupies one of the most beautiful portions of Germany, the eastern or right side of the broad lowland of the Middle Rhine and the slope of the *Schwarzwald*. The *Rhine*, bordering it for the greater part of its extent, affords a fine highway, and the streams flowing to it from the hills water the land admirably, besides giving great motive power by their rapid descent.

Thirty-four per cent of the surface is forest-covered; thirty-seven per cent well-tilled agricultural land, meadow, vineyard, or orchard. It is not a manufacturing state, and its trade is chiefly in the transit of goods. *Carlsruhe*, the capital, and *Mannheim*, at the confluence of the Neckar and Rhine, are its largest towns. *Heidelberg* (north) and *Freiburg* (south) are the seats of uni-

¹ An ancient duchy of the Frank empire named from the tribe of the Suevi.

² The name Palatinate or Pfalz is derived from the territory which was from the eleventh century onward under a hereditary Count Palatine or Pfalz-graf of Germany. Bavaria received the largest share of this territory at the peace of 1815.

versities. *Baden-Baden* in the centre, the famous watering-place, gives its name to the Duchy.

25. The "Reichsland" or imperial territory of **ELSASS-LOTHRINGEN** (Alsace and Lorraine), restored to Germany after the war of 1871, comprises the area beyond the Rhine within which the Germanic element of population prevails. *Elsass* (which from 1798 to 1871 formed the French departments of Haut- and Bas-Rhin), sloping to the plain of the Rhine from the Vosges, is an exceedingly rich, populous, and fertile territory, which was called in the old times the storehouse, granary, and wine-cellar of Germany. *Lothringen* (embracing the whole of the former French department of Moselle and the eastern half of that of Meurthe) extends farther back over the undulating forest plateau between the Vosges and Ardennes, and has its chief wealth in the coal and iron mines of the Saar valley. The main outlets of the country by water are the Rhine and Moselle, and the Rhine-Rhône canal which passes through Southern Elsass.

The fortress of *Strassburg* (107,000), on the Rhine, in central Elsass, anciently a free imperial city of Germany, is the chief place in the Reichsland and its university town, noted also for its manufacture of leather-work and of beer. The cotton, wool, and silk factories and machine works of the province centre at *Mülhausen* in southern Elsass. The fortresses of *Metz* and *Diedenhofen* or Thionville, memorable in the war of 1871, are the chief places in Lothringen. The administration of the territory is under a Governor-general or Statthalter, appointed by the Emperor. There is a Representative Body with limited powers. The population (1,570,000) is mainly Roman Catholic.

5.—AUSTRIA AND HUNGARY.

1. Since 1867 Austria (German, *Oester-reich*¹) and Hungary (Ungarn) are two distinct kingdoms (sometimes called the *Cis-Leithan* and *Trans-Leithan* monarchies, the Leitha being a small stream which joins the Danube from the south, forming part of the frontier between Austria and Hungary), united by having a common ruler of the German house of Hapsburg, as well as in external policy and in military affairs. Austria-Hungary belongs to the Germanic group of European States, because the dominant race is German. The Germans, however, do not form so much as a third of its varied population.

2. **Extent.**—In point of area (241,000 square miles) Austria-Hungary ranks third among the European States, Scandinavia and Russia alone being larger. It is rather more than four times as large as England, its extreme north and south points being nearly 700 miles apart, its east and west extremities nearly 900 miles distant from one another.

¹ Charlemagne founded the *Oester-reich* or eastern realm as an eastern frontier province for protection against the incursions of the tribes of the Pannonian and Dacian plain, which was subsequently (890) occupied by the hosts of the Magyars or Hungarians after many a hard-fought battle.

Italy, Switzerland, and Bavaria are conterminous with Austria on the west; Prussia and Russia lie north and north-east; Romania lies south-east of Hungary; Servia and Montenegro to the south. The peninsula of Istria, extending into the northern Adriatic, with its gulfs on each side, is the only maritime portion of the frontier of Austria proper; but to reach this the great barrier of the Eastern Alps must be crossed. The steep and rocky shores of Dalmatia belonging to it are almost isolated from the rest of the empire.

3. Relief.—Austria-Hungary has been well termed the "*Empire of the Danube*," since it lies for the most part within the basin of that river, and embraces the whole of its upper plain, which lies at an elevation of about 300 feet above the sea.

On the west, however, Austria embraces nearly half of the great mass of the *Alps* between the plateau of Bavaria and the plain of Lombardy, the mountain and valley scenery of Tyrol and Salzburg resembling that of Switzerland on a lesser scale; the highest point of all here is the *Ortler Spitze* (12,817 ft.) An eastern outlier of these heights, the *Bakony Wald*, runs into Hungary, compelling the Danube to form a sharp east-to-south bend or knee in its course. In the north-west the *Böhmer Wald*, the *Erz* and *Riesen Gebirge* (Schneekoppe, 5254 ft.), the *Sudetic Mountains*, and the *Moravian heights*, enclose the high basin of the Upper Elbe in Bohemia. Farther east the wooded *Carpathians*, with the high outlying granitic mass of the *Tatra* (8685 ft.), rise round the north of the Hungarian plain. These are continued by the *Transylvanian Alps* (Negoi, 8345 ft.), which form the south-eastern frontier, next Romania, and which, with their northern branch the *Biharia Mountains*, enclose the highland of Transylvania or Siebenbürgen, on the east of the Hungarian plain.

4. Rivers and Lakes.—The *Danube*, entering Austria from Bavaria as a considerable river, and flowing south-eastward over the plain of Hungary, grows to more than half a mile in width before it leaves the Hungarian border to descend by the gorge of the Iron Gates into its lower plains. It is the great highway of the kingdom, and the great outlet to the Black Sea on the east.

The *Save*, the southern boundary river of Hungary, and the *Drave*, join the Danube in the south from the Eastern Alps, up to the base of which both are navigable. The *Theiss*, winding south through the plain of Hungary from its source in the Carpathians, is its great northern tributary, also navigable, and so full of fish as to be popularly described as "two-thirds water and one-third fish." The *March*, from the Sudetic Mountains, corresponds to the *Leitha* from the south in forming part of the boundary between Austria and Hungary. The high basin of Bohemia, as before said, forms the upper basin of the *Elbe*, which escapes thence into Saxony. The head stream of the *Oder* passes through Austrian Silesia; and the *Vistula*, draining like these to the Baltic, has its head streams in the northern slopes of the Carpathians in Galicia, the eastern portion of which province, however, drains to the Black Sea by the *Dniester*.

The two large lake basins of the country, which seem to be remnants of much more extensive inland waters, lie in Hungary between the Danube and the Drave. The larger, the *Platten See* or *Balaton Lake*, fifty miles long, shallow and stagnant, overflows into the surrounding marshes only in spring; the *Neusiedler See*, farther north, is now so dried up that its deeper hollows

only are filled with water. Between the years 1865 and 1870 its bed was so dry that cultivation was extended over a great part of it. The *Lake of Constanx*, on the northern margin of the Alps, and the *Lago di Garda*, on the southern, touch upon Austrian territory.

5. Climate.—Though from the variations of elevation the climates of different parts of Austria-Hungary are very diverse, three broad divisions may be recognised—(1) The climate of the countries which lie north of the Carpathian heights, in which the winters are long and cold, and in which the vine does not flourish; (2) that of the central plains and slopes of Hungary, favourable to wheat and vines; and (3) the Mediterranean climate of the Adriatic shores, which yield oil and silk.

Snow begins to fall on the Carpathians in the north in September, and lies on the heights till May. If we take the climate of Vienna as representing that of the central regions of the country, we find it nearly the same as that of London on the average of the year, but it is much more excessive. During the whole month of January the temperature at Vienna averages two or three degrees below freezing-point, and then the Danube is crossed on the ice. The heat at midsummer, however, is nearly ten degrees on an average in excess of that felt in England. The rainfall generally is somewhat less than in England. The north Adriatic coasts are subject, especially in summer, to the strong, cold, dry north wind known as the *Bora*.

Generally speaking, all the mountainous borders of Austria-Hungary are forest-covered, the woods occupying a third of the whole surface of those regions; the great plain of Hungary, on the other hand, is an open treeless *steppe*.

6. People.—Austria-Hungary extends over the area in which the different families of men in Europe meet and interlace. Its population of 38,000,000 includes *Germanic*, *Slavonic*, *Magyar*, and *Romanic* elements, with their various tongues and dialects. The Germanic prevails in the Alpine regions and in the valley of the Danube in the west, and is widely mingled with the Slavonic and Magyar in the northern and central parts of the country.

The Slavs, the most numerous branch, forming about 45 per cent of the whole population, appear in two divisions, a northern and southern; to the northern Slavs belong the *Czechs* of Bohemia (the most westerly outpost of this family), the *Moravians* and *Slovaks*, *Poles* and *Ruthenians*, or *Russniaks* of Galicia and Bukovina; to the southern Slavs belong the *Slovenes*, *Croats*, and *Servians*, who occupy the southern border lands of Hungary, between the Drave and Save, westward to the peninsula of Istria and the Dalmatian coasts of the Adriatic. The *Romanic* element appears in the south-east on the Danube frontier, in southern Transylvania and eastern Bukovina (*Wallachians*), and in the south-west, where the *Italians* prevail in numbers on the borders of Venetia. The *Magyars* occupy the central plains of Hungary. The *Szeklers* of eastern Transylvania are a branch of the same family, by some believed to be the descendants of the once formidable Huns. Among minor elements of population *Jews* are numerous in the northern provinces, *Gypsies* in Hungary, and *Armenians* in Transylvania and Galicia.

7. Religion and Education.—The state religion is the Roman Catholic, and this is professed by two-thirds of the popula-

tion ; a large proportion on the eastern borders next Russia adhere to the Greek Church ; Protestants are most numerous in Hungary and Transylvania, but form only a tenth part. General education, excepting in German Austria, where the compulsory system is enforced, is in a very backward state. There are, however, ten universities in Austria-Hungary—at *Vienna, Prague, Pest, Graz, Innsbruck, Cracow, Lemberg, Czernowitz, Klausenburg, and Agram.*

8. **Industries.**—The occupations of the country naturally divide themselves between the mining and pastoral industries of the mountains, and the agricultural and pastoral of the plains.

Agriculture employs by far the largest share of the population ; and the lower lands of Austria-Hungary are among the most fertile portions of Europe, and would be still more productive if better methods of farming were in general use. Oats, rye, barley, wheat, and maize, are the commonest grains ; flax and hemp are widely grown, wines and tobacco chiefly in Hungary, hops in Bohemia. The central Hungarian steppes are full of cattle, and those of the Alpine regions are an exceedingly fine breed. Merino sheep, introduced by Empress Maria Theresa in 1763, are carefully reared, especially in Moravia, Bohemia, and Hungary. Hunting is still an important industry in the forest countries ; the bear appears in the Carpathians and the Alps, and in Dalmatia ; the wolf in southern Hungary, Transylvania, and Galicia. The river fisheries are important all over the land. The coast fisheries are of the utmost importance in rocky Dalmatia, where there is little cultivable land.

9. **Mineral Products.**—The mountains are rich in mineral wealth, and some parts of them, in Bohemia and Hungary in the north, and in Carniola in the south, are nearly the richest in Europe in this respect.

Gold, silver, copper, lead, zinc, nickel, are present in large quantities, but the most important product of the mines is that of iron, which is found in every province excepting those which lie round the Adriatic, and most abundantly in Styria and Carinthia. Austria possesses numerous coalfields, the richest of which are those of Bohemia, and it stands fifth among European countries in respect of the quantity annually mined : the Carpathian mountains are incomparably rich in salt ; at the famous mines of *Wieliczka* (near Cracow), the largest in the world, where galleries, halls, and even a chapel, have been cut out of the solid rock salt, a million cwts. of salt are annually raised. *Salzburg*, in the Tyrol, takes its name from the salt mountains of its vicinity.

10. **Manufactures.**—Although great progress has been made in manufactures in some parts of Austria, the country is still dependent to a considerable extent on foreign lands.

Manufactures are most developed in the German portion of Bohemia, in the districts round Vienna, in Moravia and Austrian Silesia, and in Styria. The Magyar countries are far behind in this respect, and Dalmatia and Bukovina have scarcely any manufactures at all. Weaving employs the largest number of hands ; next in number come the metal, stone, and wood workers, then the workers in leather. Iron and steel goods are made in the *Alps of Styria.*

11. **Trade.**—Enclosed on almost all sides by mountains, the kingdoms of Austria and Hungary have few natural facilities for traffic with the outer world, and their foreign commerce is consequently small.

The only available sea-board on the Adriatic has to be reached by crossing the high ranges of the eastern Alps, and then opens only upon an inland branch of an inland sea; the Danube, its great highway, also leads to an inland sea. Two-thirds of the commerce of the country passes overland through Germany; part to Turkey by the Danube; smaller shares towards Italy and Russia. Britain receives large quantities of wheat and flour from Hungary. From the diversity of products of the great divisions, however, the internal traffic is very large; the Danube joins the treeless granary of Hungary with the Alpine lands of the west, which are rich in wood but deficient in corn.

Railways now extend over every part of the kingdoms, and several lines have been carried over the mountains to bring the central lands into easier communication with the Adriatic.

12. **Government.**—Previous to the war of 1866 Austria was an absolute monarchy. The disasters of that war, however, compelled the emperor to reform the internal administration of the state, and to grant to the Hungarians the constitution for which they had struggled in 1848. The government of both states is now a constitutional one.

Austria and Hungary have each their own Parliament, Ministers, and Government. In Austria the *Reichsrath*, or Council of the Empire, consists of an Upper (Herrenhaus) and a Lower Chamber (Abgeordnetenhaus). In Hungary the *Diet* is also composed of an Upper House of Magnates and a Lower House of Representatives. The kingdoms are united by having one hereditary sovereign, a common army and navy, and a united external diplomacy controlled by a body called the *Delegations*, half of which represents the Legislature of Austria, half that of Hungary, its jurisdiction being limited to foreign affairs and war. Each of the Cis-Leithan Crown lands has its provincial diet in addition.

CIS-LEITHAN AUSTRIA.

13. The Arch-Duchies of AUSTRIA (pop. 3,000,000), below and above the Enns, form the nucleus of the monarchy. They extend along both banks of the Danube, which below Vienna emerges upon a broad plain, of which the *Marchfeld* forms the best-known part. The country is hilly, and in the south quite alpine in its character. Coal and iron are won; the vine is cultivated with success, and the manufacturing industry of great importance. The inhabitants are almost without exception Germans.

*Vienna*¹ (pop. 1,100,000), the capital of the Austrian monarchy, on the Danube, just where it leaves the mountainous region and enters the plain, is a great centre of traffic; all the provinces radiate outward from this centre, and the most convenient highroads from one to another lead through it.

¹ German *Wien*, from the little stream of the Wien which flows through the old city.

Vienna comprises within itself one-seventh of all the industrial activity of Austria. *Linz*, also on the Danube, is the seat of a considerable trade. *Steyr*, on the river Enns, is noted for its steel and iron industry. Right in the centre of the limestone mountains, in a district famous for its salt mines and brine springs, and hence known as the *Salzkammergut* ("Estate of the Salt Office"), are *Ischl* and *Hallstatt*.

14. The Duchy of SALZBURG (pop. 155,000) is a mountain country, bounded on the south by the ice-clad Hohe Tauern, and drained by the Salza, a tributary of the Inn. Gold, iron, nickel, and salt (at *Hallein*) are won. *Salzburg*, the capital, is renowned for the beauty of its site.

15. The Duchy of STYRIA (Steiermark, pop. 1,200,000) is traversed by three spurs of the Alps, but not wanting in fertile plains and valleys, which are for the most part carefully cultivated. The principal rivers are the Mur, Drau or Drave, and Sau or Save. The north is inhabited by Germans, the south by Slovenes.

Northern Styria is the centre of the Austrian steel and iron industry, carried on more especially around *Leoben*. The capital, *Graz*, is a staple place for the manufacture of machinery.

16. The Duchy of CARINTHIA (Kärnten, pop. 340,000) is shut in between lofty ranges of the Alps, and drained by the Drau or Drave. Lead and zinc are foremost amongst the products of its mines. Capital, *Klagenfurt*.

17. The Duchy of CARNIOLA (Krain, pop. 473,000) lies almost wholly to the south of the river Save, and is remarkable for its limestone mountains, abounding in underground rivers, winter lakes (including that of *Zirknitz*), and stalactite caverns (*Adelberg*). The mines yield iron, copper, lead, zinc, coal, and quicksilver (at *Idria*). Capital, *Laibach*. The inhabitants are for the most part Slovenes.

18. The Adriatic COAST LANDS (pop. 641,000) include *Görz* (*Gorizia*), *Gradisca*, the city of *Trieste*, the peninsula of *Istria*, and the islands in the Gulf of *Quarnero*, and are separated from the inland provinces by the sterile upland of the *Carso* or *Karst*. Though the bulk of the population is Slav, Italian prevails in the towns.

Trieste, the only great seaport of the Empire, at the head of its gulf, on the North Adriatic, is the seat of the Austrian Lloyds' Steamship Company, and carries on a considerable trade with all the Mediterranean ports, Great Britain, Brazil, and India. *Pola*, near the southern extremity of the peninsula of *Istria*, is the chief naval station of Austria, which possesses ten first-rate ironclads.

19. The TYROL (pop. 800,000) is the most alpine part of the monarchy. Its principal rivers are the Inn, in the north, and the *Etach* or *Adige*, in the south, the mountain range separating them

being crossed by the Pass of the Brenner (5860 feet). Coal, iron, lead, and other metals are won.

Innsbruck, on the Inn, is the capital; on the Adige are *Botzen*, *Trent*, and *Roveredo*, the two last inhabited by Italians.

20. VORARLBERG (pop. 104,000) is a small mountain district which slopes down to the Rhine, which separates it from Switzerland, and the Boden See. *Bregenz*, at the head of the latter, is the capital.

Within this small district lies the still smaller principality of *Liechtenstein*, the smallest independent portion of Europe (66 square miles, pop. 9124), with *Vaduz*, a little market town, for its capital. Its inhabitants render no military service.

21. The kingdom of BOHEMIA (pop. 5,475,000) is a hilly country, shut in between the Böhmerwald, the Erz-Gebirge, the Riesen-Gebirge, and the Moravian tableland, and drained by the river Elbe, which escapes in the north, through the picturesque gorges known as Bohemian and Saxon Switzerland. The kingdom is rich in iron, coal, and silver, and its manufactures are highly developed. Two-fifths of the inhabitants are German, three-fifths Slav.

Prague (pop. 190,000), finely seated upon the Moldau, a head stream of the Elbe, is the kernel of Bohemian commerce and transit trade; *Reichenberg*, in the north, is the centre of the textile trades; *Teplitz* and *Karlsbad*, at the foot of the Erz-Gebirge, are famous watering-places; *Pilsen*, in the west, is noted for its beer. *Königgrätz* and *Sadowa*, where the battle was fought which decided the seven weeks' war in 1866, are in the east.

22. MORAVIA (pop. 2,116,000) is a fertile region stretching from the Sudetic mountains and the Moravian tableland, on the borders of Bohemia, eastward to the foot of the Carpathians. The March is the principal river. Coal and iron abound.

Brünn (pop. 80,000) is the great centre of the Austrian woollen trade; near it is the old State prison *Spielberg*. *Olmütz* is a strong fortress on the March.

23. AUSTRIAN SILESIA (pop. 580,000) is a small fragment of the old Duchy, the bulk of which now belongs to Prussia. It lies to the north of Moravia, and is drained by the incipient Oder and Vistula. Coal and iron abound. *Troppau* is the principal town.

24. The kingdom of GALICIA (pop. 6,269,000) stretches from the crest of the Carpathians into the level country of Poland and Russia. Coal, iron, and salt abound. Poles inhabit the west, Ruthenians the east of this extensive province.

Lemberg and *Cracow* (the ancient capital of Poland) are the centres of trade, and the marts for the agricultural produce.

25. BUKOVINA (pop. 565,000) is a small duchy at the head of the Sereth and other rivers falling into the Black Sea, with *Czernowitz* for its capital. About 40 per cent of the inhabitants are Romanians.

26. DALMATIA (pop. 479,000) stretches for 300 miles along the eastern side of the Adriatic. Its coast is indented by deep fiords, and fringed by numerous islands. *Zara, Spalato, Ragusa, and Cattaro* are the principal towns.

THE KINGDOM OF HUNGARY.

The Kingdom of "Hungary" includes Hungary with Transylvania, Croatia-Slavonia, which has a diet of its own for local affairs; the Croato-Slavonian Military Frontier; and the municipal territory of Fiume. Out of a total population of 16,000,000 souls, 42 per cent are Magyars and Jews, 16 per cent Romanians, 12 per cent Germans, and nearly all the remainder Slavs.

27. HUNGARY lies within a basin almost wholly shut in by the Carpathians and by spurs of the Alps. Its wide plains are watered by the Danube and its tributaries, which enters through a "gorge" above Pressburg, and leaves through a similar gorge, known as the "Iron Gate," below Orsova.

Buda-Pest, two cities united by a fine suspension-bridge across the Danube, form the central point and capital of Hungary, and the seat of the exchange of the products of the agricultural plain, wool, wine, wheat, cattle, leather, for the wood, soda, and potash brought from the mountain region. *Pressburg*, near the eastern frontier, is the old coronation city; *Komorn*, lower down on the Danube, is famous as a fortress; *Szegedin*, the chief town on the Theiss, was almost wholly destroyed by floods in the year 1878.

28. TRANSYLVANIA, that is, the "Country beyond the Forests," in German Siebenbürgen, the Land of the Seven Castles, built by the Saxons on their establishment in the country, lies within the bastion formed by the Carpathians above the plain of the lower Danube. *Hermannstadt* is its finest, as *Kronstadt* is its most populous town.

29. CROATIA and SLAVONIA (pop. 1,818,000), with the adjoining part of the old military frontier distinct, stretch eastward from the Adriatic to the confluence of the Save with the Danube at *Semlin*.

Agram (Zagor) is the capital; on the Drave is the fortress of *Eszek*, on the Danube that of *Peterwardein*. *Fiume*, at the head of the Quarnero Gulf, is the chief seaport of Hungary.

30. Bosnia and Herzegovina, at present in Austrian occupation, are described at page 171.

6.—SWITZERLAND.¹

1. **Extent.**—The alpine country of Switzerland is entirely an inland one. No part of it is within 100 miles of the sea. It is also a very small country (15,900 square miles), not much larger than the half of Scotland.

¹ Germ. *Schweiz*; Fr. *Suisse*.

Its extent, from its German frontier in the north to that of Italy in the south, is about 150 miles=London to Hull; and from France in the west to Austria in the east 210 miles.

2. Configuration.—The southern boundary lies for the most part along the highest crests of the Alps, which descend by the Italian valleys to the plain of Lombardy; the summits of the *Matterhorn* (14,705 feet) and *Monte Rosa* (15,217 feet) rise in the boundary line, which is crossed by the *Great St. Bernard*, *Simplon*, and *Splügen* passes. North of this mass of heights the deep valleys of the Upper Rhône flowing west to the Lake of Geneva, and of the Upper Rhine flowing north-east to that of Constanz, mark a deep trench all across the country. In the heart of the country rises the mass of the *Bernese Alps* or *Oberland*, the *Alps of Uri* and *Glarus*, with the summits of the *Finsteraarhorn* (14,026 feet) and *Jungfrau* (13,671 feet); still farther north the country descends gradually by less elevated mountains and hills to the undulating lowland of Switzerland (still 1500 feet above the sea), which extends in a curve from the Lake of Constanz on the north-east along the *Valley of the Aar*, by the Lakes of Biel (Bienne) and Neuchâtel to that of Geneva. Beyond this the long parallel ranges of the *Jura* close in the country on the north-western frontier.

More than half of the whole country is covered by rocks, glaciers, forest, and mountain pasture, and cannot be permanently inhabited, except by the chamois, or by the now rare *lämmergeier* or bearded vulture. The wolf is extinct, whilst the bear has become very rare.

3. Rivers and Lakes.—All the northern part of the country belongs to the basin of the *Rhine* flowing to the North Sea. That river, having purified its waters in its passage through the *Boden-See* or Lake of *Constanz* (partly in Switzerland), is joined by the *Aar*, which rises near the Grimsel, and flows through the lakes of *Brienzen* and *Thun*. To this basin also belong the lakes of *Zürich* and *Zug*, *Luzern*, *Neuchâtel*, and *Biel* or *Bienne*. The south-western district drains by the *Rhône* towards the Mediterranean, through the Lake of *Geneva* or *Léman*, which is partly in Switzerland, partly in France.

The smaller part of the southern boundary that laps over the Italian valleys of the Alps, includes the head of *Lago Maggiore* in Switzerland and the upper *Ticino*, which flows through it to the plain of Lombardy and the Adriatic. In the east the boundary embraces only one valley which drains to the Danube, the Engadin, through which the Upper *Inn* flows north-eastward.

From the elevation at which they rise, and their rapids, the rivers of Switzerland are of no value in navigation. The *Rhine* only begins to be freely navigable at Basel, where it leaves the country. The larger lakes, however, have little steamers plying from shore to shore; that of Geneva, 47 miles long, has a considerable traffic.

4. Climate.—The climate naturally varies with the elevation above the sea-level, from that of the perennial snows at an elevation

of about 9000 feet, downward, through the pastoral alpine region and the tall pine forests, to the lower lands in which the chestnut flourishes, and where orchard fruits, the vine, mulberry, and wheat, can be grown. The temperature in the Swiss lower lands averages two or three degrees lower than the mean at London, but is several degrees higher in summer and lower in winter.

5. **Products.**—The forests, which cover about a sixth of the surface, are of immense value to the country, where most of the houses are built of wood. The mountain pastures give the characteristic employments of the people of the Alps and Jura, as herdmen and shepherds, tending their cattle and making cheese in the mountain chalets during summer.

Arable land appears only in the lower parts of the country, and does not form more than a ninth of the surface, so that, although it is diligently tilled, the crops are insufficient and corn has to be imported. Salt, obtained on the banks of the Rhine, is the only valuable mineral of the country.

6. **Inhabitants.**—Three-fourths of the population (nearly 2,900,000) of Switzerland, occupying all the centre and north of the country, is *Germanic*; the remaining fourth belongs to three branches of the *Romanic* family—the French in the west, the Italian in the south, and the Rhaeto-Romanic in the south-east. A little more than half of the population is Protestant, the rest, chiefly in the mountain region, Roman Catholic.

Education is widely diffused, especially in the Protestant districts of the north-east, where the law of compulsory education is rigidly enforced. There are universities at *Basel* (founded 1460), *Bern*, *Zürich*, and *Geneva*.

7. Switzerland, which has been called the playground of Europe, is visited by large numbers of tourists from all parts of the world, attracted by its magnificent mountain and lake scenery.

Geneva and *Lausanne* on the beautiful lake of Geneva, *Interlaken* (between the lakes of Thun and Brienz), *Luzern*, and the Rigi, *Schaffhausen* at the Rhine fall, *Zermatt* beneath Monte Rosa, *Lugano* in the heart of the Italian lakes, are notable tourist stations; *St. Moritz* in the Engadin, and *Leuk* (Louèche) in the Rhône valley, *Pfäfers* in that of the Upper Rhine, are famous for their baths.

Einsiedeln has a Benedictine abbey with a black image of the Virgin, to which 150,000 pilgrims annually repair.

8. Manufactures are carried on only along the northern lower lands of Switzerland; the characteristic industry in the west is that of watches, the different parts of which are made all over the country, and put together at the centres of this manufacture, *Geneva* (68,000) and *Neuchâtel*. In eastern Switzerland, on the other hand, the cotton and silk weaving are the prevailing industries, centring at *Zürich* (57,000), *St. Gall*, and *Basel* (45,000) which supply the surrounding countries far and wide.

Although the country is obliged to import almost all the raw material required for its manufactures, and has no natural facilities of commerce, nor sea-board, its trade is very considerable. On the north this converges to Basel and has its outlet by the Rhine; on the south-west to Geneva; a third direction will be given to traffic when the railway which is being constructed across the Alps from Zürich, by the lake shores of Zug and Luzern, beneath the *St. Gothard Pass* (6900 ft.) to the head of the Lago Maggiore, is complete, to unite the manufacturing lowland of Switzerland with the Italian plain. Railways already extend in a network over all the northern lowlands, and penetrate up the valley of the Rhône to within 30 miles of its source, where the line of communication into Italy is carried on over the *Simplon Pass* (6600 ft.) by Napoleon's fine military road.

9. **Government.**—At the close of the political storms which raged in Europe from 1789 till 1814, the affairs of Switzerland were re-arranged by the Congress of Vienna, which provided for the perpetual neutrality and independence of Switzerland in its 22 cantons.¹ Since 1848 the independent states or cantons of Switzerland have become a united confederacy (*Bundes Staat*), the supreme legislative and executive authority of which is vested in a Parliament of two chambers, sitting at *Bern*—the *Stände Rath* or States Council, and the *National Rath*, the first composed of two members for each canton, the second of representatives of the people according to numbers. The cantons are still, however, in a great measure independent democracies, each making its own laws and managing its local affairs.

10. The cantons in which the *German language* prevails are—

Bern (Berne).	St. Gallen (St. Gall).
Solothurn (Soleure).	Graubünden (Grisons).
Basel (Bâle), town and country.	Glarus (Glaris).
Aargau ² (Argovie).	Zug.
Zürich.	Uri.
Schaffhausen (Schaffhouse).	Schwyz. ⁴
Thurgau (Thurgovie).	{ Unterwalden ob dem Wald. ⁵
{ Appenzell ³ -inner-Rhoden.	{ Unterwalden nid dem Wald.
{ Appenzell-ausser-Rhoden.	Luzern (Lucerne).

Those in which the French element prevails are—

Pays de Vaud (Waadt).	Le Valais (Wallis ⁶).
Genève (Genf).	Fribourg (Freiburg).
Neuchâtel (Neuenburg).	

The Italian canton—

Ticino (Tessin).

¹ Fr. *canton*, a corner or district.

² Gau = district. Aargau = district of the river Aar.

³ From Germ. *Abten zelle* = the abbot's cell, residence of the abbot. St. Gall founded an abbey in this district in the seventh century.

⁴ Gives its name to the whole country.

⁵ Above and below the forest.

⁶ Wallis from the same root as Wales; the people of Wallis were foreigners to the Germans.

7.—HOLLAND OR THE NETHERLANDS.

1. The remarkable little country of Holland, not so large as a fourth part of England (12,600 square miles), occupies the western corner of the plains of Central Europe, where the North Sea is ever striving to gain more ground from the continent.

From the Belgian frontier on the south, to the north coast of Holland, is a distance of about 160 miles (London to Sheffield); from the German border to the west coast, about 110 miles.

2. Almost the whole country is flat and low; the parts of it nearest the coasts are even below the sea-level, the waters being kept out by dykes, which are maintained at a great annual cost. One stretch of 50 miles of the coast is guarded by a triple wall of piles driven into the soil, filled up between, and buttressed by huge granite blocks brought hither from Norway. If it were not for these dykes controlling the rivers and keeping out the sea, nearly half of the country ($\frac{1}{2}$) would be under water. All the southern part of Holland belongs to the alluvial delta lands formed at the mouths of the Rhine (the chief branch of which is named the Waal), the Meuse or Maas, and Scheldt. Opening out into broad shallow estuaries, these river mouths form a number of islands, of which *Walcheren* and *Beveland*, *Schouwen* and *Tholen*, *Over Flakkee*, *Voorne* and *Beyerland*, are the largest. Towards the north appears the great shallow gulf called the *Zuider Zee* (or South Sea, in distinction from the North Sea outside), which was formed in the seventeenth century by the bursting of the sea into a former inland lake called "Flevo" by the Roman geographers. Outside of it a chain of islands—*Texel*, *Vlieland*, *Terschelling*, *Ameland*, and *Schiermonnikoog*—marks the line of the former coast of the mainland.

3. **Rivers and Canals.**—Besides the natural channels formed by the estuaries of the *Scheldt*, the *Maas*, and the delta branches of the *Rhine* (the *Waal*, *Lek*, *Old Rhine*, *Vecht*, *Amstel*, and *Yssel*), the country is intersected in all directions by *Grachts* or larger canals, lined with rows of trees, joining river to river, and marking out the green *polders*¹ between, which are cut up by smaller drainage channels. No country in the world has such a network of waterways; ships' masts, and windmills with large sails, pumping the water from the smaller drainage canals, are seen everywhere.

The largest canal until recently was that of North Holland, which allows the passage of large ships from the great granite-built dyke of the *Helder*, at the entrance to the *Zuider Zee*, 40 miles south through the land, to *Amsterdam*; but a still greater work opens a direct channel to the capital from an artificial harbour on the North Sea, through the narrow neck of land which separates

¹ *Polder* = a drained morass or pool.

it from the *Y*, a branch of the *Zuider Zee*, on which *Amsterdam* stands. Though much territory has been lost to Holland by the invading sea, much has been regained through the unwearied energy and perseverance of the Dutch ; one of their greatest engineering enterprises was the draining of the *Haarlem lake* (72 square miles), south-west of *Amsterdam*, which was accomplished between 1840 and 1853, its site being now occupied by waving fields. A gigantic scheme for the recovery of the whole of the southern part of the *Zuider Zee* has recently received the sanction of the Government.

4. **Climate.**—The general climate of Holland resembles that of England opposite to it in its rapid variations ; but it is less distinctly maritime, and from the abundance of water in the country more humid. Dense sea fogs from the North Sea drive over it. In most winters the rivers and canals are frozen over for two or three months, when even women skate to market ; in summer the thermometer rises to 80° or 90° in the shade.

All the western and central districts of the land (70 per cent of the whole area) are covered with well-guarded “polders,” meadow or agricultural land ; in the east there remain some unproductive areas, such as the *Bourtanger Moor*, which reaches in from Hanover, and the boggy *Peel* in the south-east, from which large quantities of peat fuel are dug. These districts are, however, being gradually reclaimed by the process of planting them with fir and oak ; elsewhere there is scarcely any timber growing in the country, supplies being drawn from the Black Forest and Norway.

5. **People.**—Of the whole population of 4,000,000, the greater part (70 per cent) is formed by the Dutch or Batavians, the descendants of the Germanic tribe of the Batavi who occupied the delta of the Rhine in the time of the Roman conquest of the land.

The character of these people bears the impress of their incessant struggle with opposing natural elements : they are brave, diligent, and economical, clean to excess, born traders and seamen. *Frieslanders* (14 per cent), descendants of the ancient Frisii, occupy the northern borders of the country, where the peasantry still speak a language closely allied to Anglo-Saxon ; the *Flemings* (13 per cent) occupy the south-eastern borders of the country. Their language differs little from the Dutch ; but the dialects throughout the country are very numerous.

6. **Religion and Education.**—The larger proportion of the Dutch (60 per cent) are Protestants ; the smaller (38 per cent) Roman Catholic ; Jews form about 2 per cent. General education, though now provided for by law, does not yet extend to the adult rural population, among whom one-third of the women and about a fourth of the men can neither read nor write. Higher culture, however, is well represented in the universities of *Leyden*, *Groningen*, and *Utrecht*.

7. **Industries.**—Cattle-rearing, butter and cheese making, are the most general industries of the country, for the grazing meadows are far more extensive than the corn lands. In the latter, rye, barley, wheat, and potatoes, are the chief crops. Flax, and beet-root for sugar, chicory, and tobacco, are grown also to a considerable extent.

The herring-fisheries of Holland, in the North Sea, date from the twelfth century, and are still one of the most important sources of national wealth. The cod-fisheries of the *Dogger Bank*, in the North Sea, and of the banks of Iceland, employ a number of boats. *Vlaardingen* and *Maassluis* near the mouth of the Maas, and *Scheveningen* on the North Sea coast, are the head-quarters of the fishers.

Holland is not distinctively a manufacturing country, for it has no mineral resources of its own, and coal becomes expensive in carriage from abroad. Shipbuilding is the most important mechanical occupation of the country, and there are between 600 and 700 building yards, in connection with which many windmills are in operation in sawing the timber. Distilling of gin (or Hollands) is another characteristic industry; at *Schiedam* on the lower Maas there are more than 200 distilleries. Woollens are largely manufactured at *Tilburg* near the south border, and at *Leyden*; linen (Holland) and cotton weaving employs many hands at *Haarlem*.

8. The unexampled perseverance of the Dutch has raised Holland to the position of one of the most important and most prosperous trading countries of Europe. This has especially been the case since the beginning of the seventeenth century, when the Dutch supplanted the Portuguese in the islands of the East Indies, and founded their great colonial trading company, which supplies eastern Europe with coffee, sugar, tin, indigo, tobacco, cotton, cloves, gutta-percha, camphor, etc., for which produce *Amsterdam* and *Rotterdam*, *Dordrecht* and *Schiedam* (all upon the delta branches of the Rhine), are the great depôts. At most of these places large sugar-refineries have grown up.

9. *Amsterdam*¹ (326,000), built on piles driven into the sand, with canals for its streets, has thus become one of the great commercial cities of the world. An industry which is almost peculiar to it is that of diamond-cutting, which employs about 650 hands.

The *Hague* (s'Gravenhage, 118,000),² the seat of the court of Holland, lies 14 miles north-west of *Rotterdam* (147,000), which is the great port of the country. The chief fortified places are the *Helder* on the coast; *Bergen op Zoom*, and *s'Hertogenbosch* (= Duke's Wood) and *Maastricht*³ on the Maas in the south; *Nymegen* on the Waal; *Utrecht* (68,000) in the centre; *Deventer* on the Yssel, and *Groningen* in the north.

10. **Government.**—On the re-arrangement of European affairs, after the fall of Napoleon, Holland and Belgium were formed into the ill-assorted kingdom of the Netherlands under the family of Orange. The differences between the northern and southern divisions in race and language, in history, religion, and customs, proved too great; and Belgium seceded in 1830, receiving a Coburg prince for its ruler. The present constitution of Holland was granted in 1848. The executive authority lies in the sovereign, who is of the House of Orange, and a responsible council of ministers; the whole legislative authority is vested in the States-General, a parliament of two chambers elected by the provinces, according to population.

¹ Formerly *Amstelerdamme* = the dam of the Amstel.

² = The count's hedge or enclosure.

³ *Trajectum superiorem*.

11. The provinces of the kingdom from south to north are as follows :—

Zeeland.	North Holland.	Drenthe.
North Brabant.	Utrecht.	Friesland.
Limburg.	Gelderland.	Groningen.
South Holland.	Overijssel.	

LUXEMBURG.

12. The King of Holland is likewise grand-duke of the neutral territory of Luxemburg, between the Rhenish provinces of Germany, the Reichsland or Imperial territory of Alsace-Lorraine, Belgium, and France, which belongs to the German Zollverein though not to the German Empire. The territory is about 1000 square miles in area (or nearly the same size as the county of Cheshire), and belongs to the basin of the Moselle which forms its south-east boundary. Its inhabitants (209,000) are chiefly Germans, with an admixture of Romanic Walloons, and are mainly engaged in agriculture. The duchy was declared neutral territory in 1867, and the fortifications of its capital, *Luxemburg*, formerly one of the strongest places on the continent, were demolished.

8.—BELGIUM.

1. This small kingdom lies across the boundary between two of the great branches of the European peoples. The Germanic and Romanic elements of its population are very nearly balanced ; the former, however, prevails, and for this reason the country has been classed with the German States, though its spirit is more French.

2. **Extent.**—Belgium is even smaller than Holland (11,400 square miles), and is not so large as a fifth part of England.

From the eastern boundary, which touches upon Dutch Limburg, Rhenish Prussia, and Luxemburg, to the North Sea on the west, the distance across it is only 150 miles (Hastings to Bristol), and from the French frontier on the south to that of Holland on the north about 100 miles. Only about 40 miles of the boundary lies on the low unbroken seaboard, along which the waters are kept out by dunes and dykes from inundating the “polders.”

3. **Relief.**—All the north and west of the country is low and level plain like Holland, but the undulating forest plateaus of the *Ardennes* cover all the south and east, rising near the frontier in that direction to a height of 2000 feet above the sea.

4. **Rivers.**—The land thus slopes generally northward, and this is the direction of the numerous rivers and streams which water it. The great river of the country is the *Meuse*, which enters from France and passes out into Holland, being navigable all through Belgium. Its tributary the *Sambre*, from France, which joins it on the left near the centre of the country, is also a navigable stream ;

and the *Ourthe*, from the frontier of Luxemburg, which joins it lower down on the right, is navigable for half its course. The *Escaut* or *Scheldt* is the main river of the lowland in the west, and with its chief tributaries, the *Lys* on the left and the *Rupel* on the right, forms the waterway of the plain. A widespread canal system unites these natural channels of communication.

5. Climate and Landscape.—Belgium has a climate which resembles that of England opposite to it in the same latitude, but which is more continental or excessive. The lowland of the north is foggy and damp, like Holland; the higher country south and east has clearer skies.

The plain of the north and west is characterised by its cultivated fields and gardens, the hilly region of the south and east by its forests, pastoral valleys, and mines; but along the broad borderland between Belgium and Holland there extends the unfertile district called the *Campine* or *Kempen*, covered with marshes and barren sandy heath. Through this waste has been cut the Campine Canal, which unites the navigation of the Scheldt and Maas.

6. People.—Belgium, with its $5\frac{1}{2}$ millions of inhabitants, is one of the most densely peopled countries of the world, only equalled in this respect by some parts of the plain of China, or of the valley of the Ganges in India, a result which is no doubt due to the combination of natural facilities for agriculture, manufactures, and trade, within its limits. About 57 per cent, or more than half of the people, are *Flemings*, a branch of the Teutonic family, who speak the Flemish form of Low German. These are the inhabitants of the northern and western plain. About 42 per cent, the people of the hilly south and south-east, are *Walloons*, descendants of the old Gallic Belgæ, who eventually became Romanised, especially in their language, which is now a French patois.

Their name (in Dutch *Walen*) shows that, like the Welsh, Wallachians, etc., they were "foreigners" to the Germanic peoples. In their impulsive character, dark hair, and grey eyes, they contrast with the fair, phlegmatic, earnest Flemings.

7. Religion and Education.—Almost all the inhabitants of Belgium are Roman Catholics, though complete liberty and social equality is allowed to all religious confessions. The kingdom is divided into six dioceses—the Archbishopric of Malines, and the Bishoprics of Bruges, Ghent, Liège, Namur, and Tournay. Education is not yet generally diffused through the population, and was, until recently, almost entirely in the hands of the Roman Catholic clergy. There are State universities at *Ghent* and *Liège*, and an independent liberal university at *Brussels*, but the Roman Catholic university of *Louvain* has by far the largest number of students.

During the occupation of the country by the French in Napoleon's time, the official use of the Flemish language was forbidden, and it is only since 1830 that this national form of speech and its literature have been reviving. French is the language of the Court and of the higher classes, and the facilities for the introduction of French literature hinder the development of a national one.

8. Products and Industries.—About a fourth of all the inhabitants of Belgium are occupied in agriculture. Besides wheat, rye, and oats, hops are cultivated on a large scale, for export chiefly to France and England. Beetroot for the sugar-factories, of which there are over a hundred in the country, is also a large crop, and flax is largely grown in the Flemish lowlands.

Two great *coalfields* extend across the central part of the country from west to east, along the valleys of the Meuse and its tributary the Sambre, and from these nearly fifteen millions of tons of coal are mined every year. In proportion to its area, Belgium produces more coal than even the British Isles. *Iron* is obtained in smaller proportion, but still in large quantity, as well as lead and zinc, and Belgium has more than 2000 stone quarries.

9. Along the line of the coalfields in the valley of the Meuse lie the great iron towns of *Liège*, where about 20,000 men are employed in the manufacture of arms and cannon; of *Seraing*, near it, where machinery is forged on an almost equal scale; *Namur*, *Charleroi*, and *Mons*. Manufactures of various kinds employ about a fifth of the whole population. The oldest industry is that of linen-weaving, which is still the characteristic one of all the towns in the west of the lowland—*Ghent* (or *Gand*) and *Aalst* (Alost), *Tournay* (where the so-called Brussels carpets are made), *Kortryk* (Courtrai), *Rousselere*, and *Brügge* (Bruges¹). Ghent is also the chief seat of the cotton manufactures. Lace-weaving is characteristic of *Brussels* and *Mecheln* (Malines).

10. *Brussels*, the capital (391,000), near the centre of the country, is a second Paris, with its boulevards, palaces, monuments, and galleries. The commerce of the country, however, flows through *Antwerp* (160,000), the great seaport town and fortress of Belgium, on the Scheldt, towards which railways converge from all parts of the country.

Belgium has a much greater extent of railway in proportion to its area than any other European country. Through the fortress of *Ostend*, the only place of importance on the North Sea coast, almost all the direct traffic with England passes, and it is the head-quarters of the Belgian cod and herring fisheries. The field of *Waterloo* lies twelve miles south of Brussels. *Spa*, formerly much frequented for its mineral waters, is near the German frontier on the east.

11. Government and Political Divisions.—The constitution of Belgium, the most recently made regal state of the Continent, dates from 1831. By this the legislative power is vested in the King, a Chamber of Representatives chosen according to population,

¹ = Bridges, there being 54 of them in the town; a venerable but half-deserted place, once the metropolis of the world's commerce.

one for every 40,000, and a Senate, also elected by the people. The executive power lies in the king and a responsible ministry.

The provincial divisions of the country are as follows :—

Chiefly Flemish.	{	Brabant (South Brabant).	{	Hainaut or Hennegau.
		Antwerp.		Namur.
		Limburg (Belgian Lim-		Luxemburg (Belgian Lux-
		burg).		emburg).
		West Flanders.		Liège (Luyk, in German
		East Flanders.		Lüttich).

II. THE ROMANIC STATES.

To these belong especially France, Spain, Portugal, and Italy, with Romania, till recently a vassal state of Turkey.

1.—FRANCE.

1. France occupies the narrowest part of the great western peninsula of the European continent between the Mediterranean, where the Golfe du Lion runs into the land, and the Atlantic which invades the continent in the Bay of Biscay and the English Channel. As both coasts have many harbours, the situation between two seas is a very advantageous one. In extent (204,000 square miles) it is fully three and a half times larger than England, measuring about 600 miles each way across it. Most of its frontiers are natural.

The Atlantic washes it in the west and north-west; the Mediterranean in the south-east; on the south the high barrier of the Pyrenees rises between it and Spain; on the east the Alps and Jura separate it from Italy and Switzerland, and part of the Vosges mountains forms the boundary towards Germany. On the north-east alone the political limit towards Germany and Belgium is artificially drawn, and has to be guarded by a line of fortresses. Since 1768, France has held the Mediterranean island of *Corsica*, a rugged pyramid of forest-covered mountains, a little more than half the extent of Yorkshire.

2. **Relief.**—Within France the long curve of the *Cévennes Mountains* in the south-east, prolonged northward by the *Côte d'or*, the *Plateau of Langres*, and the *Vosges*, determines the slope of the country. Between them and the *Alps* lies the deep valley of the Rhône, with a southward fall to the Mediterranean. But these high lands, ramifying outward with gentler descent to north and west, give direction to the drainage of the longer slope to the Atlantic coast, the Bay of Biscay, the Channel, and the North Sea.

Mont Blanc (15,777 ft.), the highest point of Europe, rises within France, near the point of union of its boundary with that of Italy and Switzerland; the *Pic de Néthou* (11,168 ft.), the highest point of the Pyrenean barrier, stands just outside the boundary on the Spanish side; centrally in the country, the highest point is *Mont Dore* (Puy de Sancy, 6180 ft.), in the volcanic group of the mountains of Auvergne, embraced by the curve of the Cévennes. The

lowlands of France are not level plains like those of Belgium and Holland, but for the most part undulating districts; they lie along the Atlantic border (excepting where the heights of Normandy and Brittany run out into the ocean) and in the Mediterranean valley of the Rhône.

3. Rivers.—The main direction of the drainage of France is from south-east to north-west over the long slope of the land. The *Garonne*, receiving the numerous *gaves*, as the streams from the Pyrenees are called, and its tributary the *Dordogne*, from the mountains of Auvergne, forming the estuary of the *Gironde* in the south; the *Loire*, curving through the centre of the country from the Cévennes to the Atlantic,—the longest river of France; the *Seine*, from the Côte d'or, flowing north-west to the English Channel; and the *Meuse*, from the Vosges, passing out to join the Rhine in the Netherlands—are all navigable rivers, forming with their tributaries the natural waterways of France, which possesses a river navigation of about 5500 miles. The great southern river, the *Rhône*, from the mountains of Switzerland, receiving its chief tributary, the *Saône*, from the southern Vosges, is comparatively valueless to navigation from the rapidity of its current.

About 150 canals unite the various river basins or pass laterally along the unnavigable portions of the rivers. Among the more important of these may be noted the *Marne-Rhine Canal*, the longest in the French system, which joins the Rhine above Strassburg over the Vosges with the Marne, a tributary of the Seine, which falls into that river above Paris: and the *Canal du Midi*, or the southern canal, completed in 1668, which joins the Atlantic and Mediterranean from the basin of the Garonne to the Gulf of Lions.

4. Climate and Landscape.—Occupying a middle position between northern and southern Europe, France enjoys one of the finest climates of the continent. Towards the north-east it becomes more continental, towards the north-west more maritime and liker that of southern England; in the warm south the hot winds from the African deserts may occasionally be felt, and in contrast to these, in the Rhône valley, the chilly north-east wind known as the *Mistral* at times descends from the Alpine heights with great violence; but the greater part of the country is within the area of the westerly winds.

At Paris the temperature of the coldest winter month is scarcely above the average of London at the same time, though the summer heat exceeds that of London by an average of three or four degrees. The distribution of climate is, however, best indicated by the limits of the growth of some of the more important products: thus, the region in which the oil-yielding *olive* flourishes lies south-east of the Cévennes, across the valley of the Rhône; *maize* extends northward to a line drawn diagonally across France, from the Gironde estuary to the Rhine north of Strassburg; the *vine* finds its northern limit in a parallel line drawn from above the mouth of the Loire to where the Meuse leaves the country; and all the remaining north-western maritime region nearest England may be called the *wheat* region of France.

5. Very few parts of the country are not adapted for cultivation ; only some parts of the Pyrenees, the Landes, and of the Vosges, can be thus characterised. The destruction of natural timber in France within the past two centuries has been enormous, and it is only in comparatively recent years that attention has been directed to the preservation of the forests and to planting.

It is estimated that now about an eighth part of the surface is wooded, the most extensive remaining forests being those of *Orléans* and *Fontainebleau*, between the northern curve of the Loire and Paris ; of the hills of Var in the extreme south-east ; and of the Jura and the Vosges. Much of the department of Vaucluse, in the lower valley of the Rhône, is covered with *Truffle oaks*, from about the roots of which enormous quantities of this fungus are obtained. The western promontory of Brittany is now barest of all, but here, as in the mountains of Auvergne, the Cévennes, the Pyrenees, and the Alps, replanting has begun. The vine is grown in all parts of France excepting the north-western departments ; more than 1400 varieties of grapes are recognised ; the finest growths being those of *Champagne* and *Burgundy* in the east, and of the basin of the Gironde (*Bordeaux*) in the south-west. Wheat, flax, and beetroot for sugar, are the staple products of the north ; olives of the extreme south-east. Apples and pears are widely grown in Normandy for cider and perry ; oranges, citrons, and pomegranates come from the Mediterranean departments. But throughout the country the subdivision of farms, in consequence of the law of succession, and the small number of landed proprietors who reside on their estates, have checked the progress of agriculture. In pastoral wealth, in cattle and sheep rearing, France is far behind England and Germany, in proportion to its extent, and it is mainly dependent for its cavalry horses on other countries. Among the larger wild animals bears are now only found in the Alps and Pyrenees ; the older forests, however, shelter the wolf, fox, and wild boar.

6. **People.**—To the aboriginal *Iberian* and *Celtic* peoples of France came the *Romans*, chiefly in the south and east ; the descendants of this intermixture being the small dark and lively Frenchman of the south ; in the north, in some degree, the Germanic element became interwoven ; hence the Frenchman of the northern parts of the land partakes more of the character of his neighbours, is taller, blonde, blue-eyed, and less volatile than the southerner. Hence also the old division of the Romanised French language into the *Langue d'oc* (or Provençal) of the south ; and the *Langue d'oïl* (or Roman Walloon) of the north, from which the many dialects now spoken have descended.

The *Celtic* element remains almost pure in Brittany, and the *Iberian* in the *Basques* of the western Pyrenees. *Italians* appear in the south-east, *Flemings* on the Belgian frontier, and *Germans* towards Lorraine and Alsace, though, in this direction, the boundary drawn along the Vosges and round Lorraine since the war of 1871 follows as nearly as possible the meeting points of the German and French inhabitants of the north-east. With its 36½ millions of inhabitants, France belongs to the best peopled region of Europe, but its population has not exhibited the same rate of increase as other European lands during the present century.

7. **Religion and Education.**—France is a Roman Catholic

country. Protestants form but a small proportion, and are most numerous in the south-west between the Loire and the Pyrenees. Public education is entirely under the supervision of the Government, and partly in the hands of the clergy. Of the whole adult population it was found in 1872 that more than a third were unable to read or write. But the distribution of education is very unequal in different parts of the country, and shows a very remarkable gradation from advancement to extreme backwardness in the direction from the districts which lie nearest to Germany towards the Atlantic coast-lands of the west and south-west, in which education is most deficient of all.

The University of France, which has academies in the chief towns, provides for higher education in letters, science, law, theology, and medicine. From its graceful ease the French language has become almost universally current among the higher classes of all nations of Europe, and French literature is the most universally circulated of all. In a still greater degree, however, than through its language, France (through its capital, *Paris*), rules the higher classes of other nations by its fashions, that is, through the varying forms of dress adopted in its capital and eagerly copied by the outer world.

In almost all the sciences France has representative men of high standing. Bravery, ingenuity, and liveliness characterise the nation; but on the other hand, in impulsiveness and inconstancy, and in a love of pleasure which passes to extreme frivolity, the French contrast strongly with the earnest Germans.

8. Industries and Trade.—Agricultural and pastoral pursuits occupy the larger share of the people of France, one of the principal sources of agricultural wealth being, as before said, the vine and its wines. The trade of the Champagne wine district centres at *Reims* and *Châlons-sur-Marne*, east of Paris; that of the Burgundy wines at *Dijon*, in the Saône valley, on the east; that of the Gironde wines, or claret, at *Bordeaux*, on the south-west. The subsidiary products of vinegar and brandy are made most largely, the one at *Orléans*, on the Loire, the other at *Cognac*, a small town on the Charente, north of Bordeaux.

Textile manufactures are the most important of the mechanical industries of France. *Lyons*, the second city of France, in population (343,000), at the junction of the Saône with the Rhône, is the centre of the silk-growing region and the metropolis of the *silk manufactures*, in which the country stands unrivalled. *St. Etienne* (126,000), south-west of Lyons, comes second to it in this manufacture, after which come *Nîmes*, near the delta of the Rhône, *Tours*, on the Loire, and *Paris*. Inland trade and manufactures in the south are most active at ancient *Toulouse* (131,000), on the Garonne, and at *Montpellier*, near the Rhône delta. *Woollen, linen, and cotton manufactures* are almost entirely confined to the northern region. Foremost among these manufacturing towns of the north stands *Lille*, the fifth city in point of size in France (163,000), with its neighbour towns of *Roubaix* and *Tourcoing*, still nearer the Belgian manufacturing region; and *Cambrai*,¹ *Douai*, *Valenciennes*, and *St. Quentin*, south-east of it; *Rouen* (105,000), on the Seine in Normandy, and *Amiens*,

¹ Whence *cambric*.

on the Somme, between Rouen and Lille, *Reims*, in the Champagne district, *Sedan*, on the Ardennes, and *Nancy*, in French Lorraine, still farther east, are the other chief manufacturing towns of the northern region. *Le Mans*, on the Sarthe, a northern tributary of the Lower Loire, *Angers* on the Loire, and *Rennes* north-west of it, are more southern woollen and cotton manufacturing centres. *Paris* manufactures costly shawls.

At *Sèvres*, south-west of Paris, are the chief *porcelain* factories, which give the models and take the lead in this industry. *Limoges*, on the Vienne, a southern tributary of the Loire, is also a noted centre of porcelain manufacture. *Glass* is very extensively made in the northern departments. Paris itself excels in every kind of luxurious and fanciful manufacture. *Besançon*, the largest town near the frontier of Switzerland, is a great depot for the produce of the French half of that country, and manufactures watches largely.

9. The mining industries of France, though on a limited scale in comparison with those of England, are still very considerable. *Coal* is drawn chiefly from the basin of *Valenciennes*, which continues the Belgian coalfield on the north, from the basin of the Loire and Rhône, and from that of *Creuzot*, on the south of the heights of the Côte d'or. Though more than 17 millions of tons are annually mined, the supply is insufficient for the wants of France, which imports coal largely from Belgium, Germany, and England. Iron occurs in eleven districts and is of excellent quality, but generally lies distant from the fuel necessary to smelt it, so that this metal must also be imported in large quantity. *St. Etienne*, south-west of Lyons, is the most noted centre of the French hardware manufactures, especially of chassepot guns and machinery; *Le Creuzot*, in the midst of its coal basin, has also noted ironworks.

10. The trade of France is only inferior to that of Britain and the United States; the position of the country, with coasts on three of the most frequented seas, is exceedingly favourable to its commerce, which is further aided by nearly 14,000 miles of railway. The great seats of maritime traffic with all the world are *Marseille* (320,000), on the Mediterranean coast; *Bordeaux* (215,000) and *Nantes*, with *St. Nazaire*, on the coast of the Bay of Biscay; *Le Havre* (at the mouth of the Seine, 92,000), *Boulogne*, *Calais*, and *Dunkerque*, on the English Channel. All of these may in a sense be called the harbours of the central point of the life of the state, luxurious *Paris* (2,226,000), which has grown out from the original settlement of the Celtic Parisii, which Cæsar found on the island of the Seine, to be the second city of Europe, with over two millions of inhabitants.

11. The naval arsenals of France, dockyards, and stations of the fleet, are at *Cherbourg* and *Brest*, on the north-west coast; *L'Orient* and *Rochefort* (south of La Rochelle), on the Bay of Biscay; and *Toulon*, on the Mediterranean. *Nice* and *Cannes*, on the Riviera, are favourite winter resorts. France has more than 100 fortified places; indeed almost every town along the northern and north-eastern border is a fortress. *Briançon*, the highest town in the country, in the Alps, south of the pass of Mont Cenis into Italy, is the chief arsenal and depot of this mountain barrier, and is considered impregnable.

12. **Government and Political Divisions.**—By the latest of the frequent political changes that have taken place since the great Revolution (1789), France was proclaimed a Republic. Its present constitution dates from 1875, and vests the legislative power in an assembly of two houses, a Chamber of Deputies and a Senate. The executive is in the hands of a chief magistrate, called the President of the Republic, controlled by a responsible ministry.

Previous to the Revolution France was divided into provinces, which bore the names of the separate territories out of which the state had been gradually built up. These are accordingly of much greater historical interest than the later division into 87 *departments*, which are almost universally named after the river basins in which they lie. The provincial names are also those which are still most in use in ordinary life in France.

The following are the provinces, with the dates of their incorporation as parts of France, and the departments they include :—

- I. *Ile de France*, the original kernel of the state round Paris (*Departments*—Seine, Seine et Oise, Seine et Marne, Oise, Aisne).
- II. *Champagne* (part of France since 1285); to the east of the former (Ardennes, Marne, Haute-Marne, Aube).
- III. *Lorraine* (since 1766), east of Champagne (Meuse, Meurthe et Moselle, Vosges, and territory of Belfort).
- IV. *Flanders* (since 1677), on the border of Belgium (Nord).
- V. *Artois* (since 1640), on the Channel (Pas de Calais).
- VI. *Picardy* (original), adjoining Ile de France on N. (Somme).
- VII. *Normandy* (since 1203), along the Channel (Seine-inférieure, Eure, Calvados, La Manche, Orne).
- VIII. *Brittany* (since 1532), the western peninsula (Finistère, Morbihan, Côtes-du-Nord, Ille et Vilaine, Loire-inférieure).
- IX. *Poitou* (since 1375), south-east of Brittany (Vendée, Deux-Sèvres, Vienne).
- X. *Anjou* (since 1202) north of Poitou, across the Loire (Maine et Loire).
- XI. *Maine* (since 1202), between Anjou and Normandy (Mayenne, Sarthe).
- XII. *Angoumois*, *Aunis*, and *Saintonge* (since 1242), south of Poitou, along the Bay of Biscay (Charente and Charente-inférieure).
- XIII. *Touraine* (since 1256), across the Loire, east of Anjou (Indre et Loire).
- XIV. *Orléans*¹ (original), south of Ile de France (Loire et Cher, Eure et Loire, Loiret).
- XV. *Nivernais* (since 1707), south-east of Orléans (Nièvre).
- XVI. *Bourbonnais* (since 1559), south of Nivernais (Allier).
- XVII. *Marche* (since 1531), south-west of Bourbonnais (Creuse).
- XVIII. *Berri* (since 1100), between Marche and Orléans (Cher, Indre).
- XIX. *Limousin* (since 1369), south-west of Marche (Haute-Vienne and Corrèze).

¹ From its capital *Aurelianum*, named from Roman Emperor Aurelius.

- XX. *Auvergne* (since 1531), west of Limousin (Cantal, Puy-de-Dôme).
- XXI. *Lyonnais* (since 1307), north-east of Auvergne (Loire, Rhône).
- XXII. *Burgundy* (since 1476), south of Champagne (Ain, Saône et Loire, Côte d'or, Yonne).
- XXIII. *Franche Comté*¹ (since 1674), nearest Switzerland (Haute-Saône, Jura, Doubs).
- XXIV. *Dauphiné* (since 1349), between the Alps and the Rhône Channel (Isère, Drôme, Hautes-Alpes).
- XXV. *Savoie* (since 1860), south of Lake of Geneva (Savoie, Haute-Savoie).
- XXVI. *Languedoc* (since 1271), along the Mediterranean, west of the Rhône (Ardèche, Haute-Loire, Lozère, Gard, Hérault, Tarn, Haute-Garonne, Aude).
- XXVII. *Guyenne* (since 1453), in the basin of the Garonne, south-west (Aveyron, Lot, Dordogne, Tarn et Garonne, Lot et Garonne, Gironde).
- XXVIII. *Gascogne* (since 1453), in the south-west, old *Aquitaine* (Landes, Gers, Hautes-Pyrénées).
- XXIX. *Béarn* and *Navarre* (since 1607) (Basses Pyrénées).
- XXX. *Foix* (since 1607) next Spain, in the south (Ariège).
- XXXI. *Roussillon* (since 1642), in the south-east (Pyrénées-Orientales).
- XXXII. *Avignon*, *Venaissin*, and *Orange* (since 1791), near the Rhône delta (Vaucluse).
- XXXIII. *Provence*, Roman *Provincia* (since 1245), in the south-east along the Mediterranean (Bouches-du-Rhône, Basses-Alpes, Var, Alpes-Maritimes).
- XXXIV. *Corsica* (since 1768), in the Mediterranean (Corse).

THE PYRENÆAN OR IBERIAN² PENINSULA.

We shall first consider the physical characteristics and the population of this Peninsula as a whole, and afterwards describe separately the government, productions, etc., of each of the two countries (Spain and Portugal) which occupy it.

1. **Extent.**—This most westerly of the southern peninsulas of Europe, pushed out like a great buttress into the ocean (228,000 square miles), is nearly four times as large as England, or is larger than the German Empire or France, and somewhat less than Austria-Hungary.

From north to south and from east to west the irregular square of the Peninsula, which was compared in old times to a bull's hide in shape, is about 500 miles.

¹ = Free country of Burgundy.

² From the ancient name Iberia, given from the Iberus or Ebro river

2. **Relief.**—The whole Peninsula is a plateau and mountain land, the most extensive and continuous if not the loftiest in Europe.

On its northern side rise the *Pyrenees* (11,168 ft.) and the *Cantabrian* or *Asturian* Mountains (summit Peña Vieja, 8740 ft.), the ramifications of which may be said to extend to Cape Finisterre in the west. In a direction generally parallel to those farther south, beyond the valleys of the Ebro and Duero, rise the ranges of the *Sierra de Guadarrama* (7900 ft.), *de Gredos, de Gata*, and *da Estrella*, terminating at the cape called the Rock of Lisbon, which shuts in the estuary of the Tagus. In the centre of the peninsula, between the valleys of the Tagus and Guadiana, are the *Mountains of Toledo* and the *Sierras de Guadalupe* and *Mamede* continuing them westward. Next southward, with the same east and west direction, the *Sierra Morena* and its outliers may be said to reach across the country from Capo de la Náo on the Mediterranean to the *Sierra de Monchique*, which forms Cape St. Vincent, the south-western corner of the quadrangle. In the line of the *Sierra Morena* prolonged eastward are noticed the three islands of Ivica, Majorca, and Minorca. Lastly, along the south coast rises the *Sierra Nevada* and its tributary ranges between the Capes of Gata and Palos on the south-east, and those of Trafalgar, Tarifa, and Gibraltar on the extreme south, facing the strait which leads from the Atlantic to the Mediterranean. *Mulhacem*, the summit of the *Sierra Nevada*, is the culminating point of the peninsula (11,661 ft.), higher even than the summit of the *Pyrenees*, and supplying from its snowy cap the most southerly glaciers of Europe. Nearly half of the area of the Peninsula, in the central region between these ranges, is high, bare, monotonous table-land, the most important sections of which are named the *Plateau of Old Castile and Leon*, or that which extends between the *Cantabrian* Mountains and the *Guadarrama*; and of *New Castile and Estremadura*, between the *Guadarrama* and *Morena*. The city of *Valladolid* stands near the middle of the former plateau, at an elevation of 2220 feet above the sea. *Madrid*, the capital, on the latter, is 2130 feet.

The only lowlands of the Peninsula which are of any considerable extent occur in the lower part of the *valley of the Ebro* in the north-east; and as the *plain of Seville* in the lower basin of the *Guadalquivir* in the south-west; this plain has the *Campaña* of Cordova at its upper end and the saline swamp land named the *Marismas*, which extends across the mouth of the river, at the lower, shut out from the sea by the great sand-dunes called the *Arenas Gordas*.

3. About two-fifths of the coast-line of the Peninsula lies on the *Mediterranean*, three-fifths face the *Atlantic* and the *Bay of Biscay*. The north coast is almost everywhere steep, its high broken rocks being beaten by the waves of the stormy bay, and is all but inaccessible to ships, excepting in the deep inlets or *rias*, which recall the northern fiords. The northern part of the west coast is also bold and rocky, with deep inlets such as those of *Pontevedra* and *Vigo*. Beyond the mouth of the *Minho* it becomes a broad sandy strand, and from that passes to marsh lands with stagnant pools, from which much salt is obtained. Between the *Estuary of the Tagus* and the *Bay of Setúbal* rise the chalk heights of *Arrabida*, which terminate at the high point called Cape Espichel. Beyond this lies the *coast plain of Alemtejo*, which is terminated in the south by the high coast of Cape St. Vincent. The south coast round by the sand-dunes of the plain of the *Guadalquivir* and the famous *Bay of Cádiz* is lower again. From the high Cape Trafalgar past the south-west point of Europe by the *Rock of Gibraltar* to Cape de Gata steep shores interchange with more level strand. The steppe-like *Campo de Cartagena* beyond Cape Gata includes the *Mar Menor*, a large coast lagoon fourteen miles long, past which the east coast forms high jagged capes. Beyond Cabo de la Náo begins

the stormy *Bay of Valencia*, feared by sailors, bordered by the cultivated *Plana*. Again a varied coast follows; then the low lagoon-covered *Delta of the Ebro* pushes out into the sea, and beyond that is the high coast formed by the spurs of the Pyrenees.

4. Rivers.—From the parallel east and west direction of the lines of heights on the Peninsula it follows that all the important rivers take these directions. The longer slope and the greater number of the rivers flow west to the Atlantic, a smaller number eastward to the Mediterranean. The great general height of the land from which they have to descend gives them a rapid course, generally over rocky beds. They are also subject to great changes of level in winter floods and summer droughts, so that in general they neither serve well the purpose of irrigating the land nor that of navigation.

To the eastern system belongs the *Ebro*, which gathers its supplies from the Pyrenees, and from the eastern descent of the plateau of Old Castile. The *Guadalquivir*, *Júcar*, and *Segura* are the other important rivers of the eastern watershed. The *Minho*, *Duero*, *Tagus*, *Guadiana*,¹ and *Guadalquivir* drain the western valleys which are formed between the mountain ranges of the Peninsula. The *Tagus*, the largest river of the Peninsula, the estuary of which forms such a magnificent harbour, is only navigable for seventy miles above its estuary (to *Abrantes*). The *Guadalquivir*, though the shortest of the larger streams, is the most important on account of its fulness and its course through the most extensive lowland of the Peninsula. The effect of the tide in it is felt for several leagues above Seville, to which city it is navigable, eighty miles from the sea. From its rapid upper course and sluggish flow over the plains beneath, its waters overflow these whenever a heavy rain falls in the *Sierra Morena*. The *Ebro* is the narrowest and shallowest of the large rivers, chiefly because a number of canals are drawn off from it for irrigation and navigation. The most important of these is that called the *Imperial Canal*, which runs parallel with its middle course for nearly a hundred miles. This, with the *Canal de Castilia*, which extends from the southern slope of the Cantabrian mountains to Valladolid near the *Duero*, is the chief artificial waterway of the Peninsula.

5. Climate and Landscape.—From the extent and varied elevation of the Peninsula its climate and aspect are very diversified, but the greatest contrasts, from temperate to almost tropical, are presented in the direction from north-west to south-east.

All the north-western maritime region has a damp, foggy, and rainy climate (at Coimbra 118 inches of rain fall in the year), with long winters, during which cold winds blow from the snow-covered mountains. Hill and dale alternate here with meadow-lands watered by copious streams full of fish. Corn, wine, and wood, from the pine on the heights to the chestnut and apple beneath, are abundant. The middle zone of the great bare table-lands, with wooded mountains between, occupying the larger part of the Peninsula, has a pleasant spring and autumn climate; chilly winter winds, however, sweep

¹ *Guad*, of frequent occurrence in the names of the southern Spanish rivers, recalls the occupation of the country by the Moors. It is the equivalent of the Arabic *Wādī* = river-bed. Thus, *Guadalquivir* = *Wādī-al-Kebīr*, or large river.

over the treeless plateaus, which in summer are burned up by the hot sun. At Madrid the pools can be skated over almost every winter, but in June and July the plains of New Castile round it become a dusty wilderness, without water or any green vegetation, and over all hangs the haze called the *calina*. The rainfall begins to be scanty here (only ten inches annually at Madrid). Pasture, with corn, wine, and olives in the lower districts, is characteristic. On descending from the plateaus the almost tropical heat and rich vegetation of the southern zone present the most striking contrasts. Here the winter is temperate, the spring and autumn delightful; but the summer heat is almost intolerable to northern Europeans, especially when the hot south wind called the *Solano* blows from the African deserts. This is the region of the orange and date, of sugar-cane, cotton, and rice.

Portugal, from its more maritime position, is exempt from the dry summer heat of the interior table-lands. Snow falls abundantly on its northern hills in winter, which is also the rainiest season of its lowlands, but it never is seen in the extreme south, where the spring begins with the year and harvest is over by midsummer.

6. The northern and central mountains shelter deer, bears, wolves, and wild goats. The Spanish *scorpion* is especially abundant in the Ebro basin; the *moufflon* or wild sheep appears in the mountains of the south; the rock of Gibraltar has its *Barbary apes*; the *flamingo* nests in the lower Guadalquivir; and the *chameleon* is seen in the neighbourhood of Malaga.

7. **People.**—The basis of the population of the whole Peninsula (now nearly 21,000,000) is that of the *old Iberians*, modified by the admixture of *Celtic*, *Phœnician*, *Roman*, *Germanic*, and *Moorish* (Arab) invaders, who from time to time gained ascendancy in the land and became intermixed with the ancient inhabitants.

A remnant of the aboriginal Iberians is found in the brave and independent Basques (500,000) of the northern Cantabrian mountain region; a residue of the Gothic invaders live in the mountains south of the Duero; and much Arabian blood is still traceable in the inhabitants of the southern and eastern coast-lands. The Romans, however, gave their language to the Peninsula. Both the rich and soft Spanish or Castilian and the more nasal Portuguese are daughters of Latin, but the antipathy which long prevailed between the branches of the inhabitants speaking these sister tongues has served to keep them separate and dissimilar. The language of the Basques of the north (called by them *Euscara*) is peculiarly their own. The Gallegos, the rude but honest and industrious people of the north-western province of Galicia, speak a dialect which is not understood by the Castilians, and which is more nearly allied to the Portuguese than to the Spanish.

8. **Religion and Education.**—At one time the proudest and most opulent of the States of Europe, sharing between them the empire of the world, Spain and Portugal had lapsed before the beginning of this century into stagnation and apathy, in which ease and squalor seemed to be preferred to labour and affluence. Since that date, however, the Peninsula has again been throwing off its lethargy, promoting education and industry, and advancing to a more healthy condition. Still, the mass of the population in both States remain in extreme ignorance and bigotry. The Roman

Catholic is the religion of the Peninsula, and little toleration is as yet shown to other creeds.

At the head of the Church in Spain stands the Archbishop of *Toledo*; the Portuguese Church is under the jurisdiction of the "Patriarch" of *Lisbon*. Spain has ten universities—at *Madrid*, *Santiago*, *Barcelona*, *Granada*, *Seville*, *Valencia*, *Valladolid*, *Oviedo*, *Salamanca*, and *Saragossa* (Zaragoza). Portugal's only university is at *Coimbra*.

2.—SPAIN.

9. All except the south-western sixth of the Peninsula belongs to the kingdom of *Spain*, which has thus an area (193,000 square miles) nearly three and a half times that of England. Spain also includes nearly four-fifths of the population of the Peninsula.

The artificially-drawn frontier towards Portugal is guarded by the fortresses of *Badajoz* and *Ciudad Rodrigo*; the chief passes of the Pyrenees towards France by those of *Pamplona* and *Gerona*.

10. **Government.**—The present monarchical constitution of Spain dates only from 1876, and by it the executive power rests with the king and his responsible ministry; the legislative rests with the king and the *Cortes*, which is a parliament composed of a senate (made up of the *grandees* or nobles of the country, who are senators by right, of senators nominated by the king, and of others elected by the state), and a congress elected by the country according to population. The palace of the *Cortes* is at *Madrid*, the capital (398,000), which is in every way the very heart of the kingdom.

For administrative purposes Spain has been divided since 1833 into forty-nine districts, each of which has its local administration. Here, as in France, however, the old provinces and kingdoms of which this state was originally made up, and of which the districts are subdivisions, are of far greater importance and historical interest.

These are

Old Castile and New Castile, the central kingdoms which took their name, it is said, from the castles built along their frontiers for defence against the Moors.

Leon, north-west of Old Castile, one of the oldest parts of the monarchy, earliest freed from the Moorish rule, and joined to Castile in the eleventh century.

Estremadura (Extrema Ora), the southern province of the old kingdom of Leon beyond the Duero.

Galicia, the north-western corner of the Peninsula.

Asturias and Biscaya, on the maritime slopes of the Cantabrian mountains, whose inhabitants held their own against the Moors.

Navarre, on the southern slopes of the Pyrenees, at the head of the Ebro valley.

Aragon, north-east of Castile, to which it was united in the fifteenth century by the marriage of Ferdinand and Isabella ; along with

Catalonia, in the north-eastern corner of Spain, which had been joined to Aragon in the twelfth century.

Valencia, extending along the coasts of its Mediterranean gulf, which remained Moorish longer than any of the preceding provinces.

Murcia, on the south-east, subjugated by Ferdinand III. of Castile in the thirteenth century.

Andalucia, in the south, including Sevilla and Granada, whence the Moors were not driven till the end of the fifteenth century.

The Balearic and Canary Islands are considered part of the home country of Spain.

11. **Products and Industries.**—Agriculture is the chief source of national wealth in Spain. Valencia and Catalonia in the east, Galicia, Asturias, and the Basque districts in the north, are the most industrious in this respect. The vineyards of Andalucia, whence come our *sherry* (Jerez) and *Málaga wine*, are the most famous. *Raisins* are dried chiefly about Málaga, Alicante, and Valencia, on the south and east coasts. *Apples* are the chief fruit of the north-west, *oranges*, *figs*, and *almonds* of the Mediterranean provinces ; while *nuts*, known by the name of Barcelona, the port at which they are chiefly shipped, are grown on a large scale in Catalonia and Asturias. The Andalucian *horses* surpass all others in the Peninsula ; those of Castile are strong and well suited for heavy cavalry ; Galician *ponies* are hardy and well suited to their country. The horse-fair of Ronda, in the south of Andalucia, is the most important in the country. Spanish *mules* are the finest of all. *Wild cattle* from the Guadarrama mountains and Navarre are prized for the bull-fights, the national pastime, in which from 3000 to 4000 horses are annually killed. The most important pastoral industry of Spain, however, is that of *sheep-rearing*. Under an ancient law called the *mesta*, the sheep-owners of Castile, Aragon, and Leon, drive their vast flocks southward on the approach of winter to the pastures of southern Estremadura and Andalucia, in herds of about 10,000 head (*cabañas*), and every proprietor along the roads through which they pass is obliged to leave a breadth of ninety paces wide free to the herds. The *silk* worm is cared for chiefly in Valencia and Murcia. The *Cochineal* insect is cultivated in the extreme south. The *fisheries* of Galicia, of Cádiz, and Valencia, are the most important.

In recent times, on account of the great destruction of the *forests* in Spain, the Government has turned its attention to their preservation, and a forest academy has been established at Villa Viciosa, north-east of Madrid. About a fifth of the country, in the mountain ranges chiefly, is covered with timber, and about a fifth of that is pine wood.

In mineral wealth Spain is one of the richest countries in Europe, as the Phœnicians and Romans discovered in ancient times. Most important are the royal *quicksilver* mines of Almaden, on the northern slope of the Sierra Morena, and the *Copper* mines of Rio Tinto, west of Seville. *Iron* is very widely dis-

tributed, but is mined for the most part in Biscay and Asturias, near Toledo south-west of Madrid, and in Múrcia and Granada on the south. *Coal* is found in almost every province, the most numerous mines being in Asturias in the north, and about Córdoba in the Guadalquivir basin in the south, but owing to the difficulties of carriage the imports of Belgian and English coals are large. *Salt* is abundant; near Cardona in Catalonia is a famous salt mountain, which presents a brilliant aspect when the sun shines on it; *sea salt* is obtained chiefly on the coasts of Múrcia and the bay of Cádiz.

12. Manufactures and Chief Towns.—Spain long remained far behind the other countries of Europe in its manufactures, and though within recent years it has made great advances, its imports still greatly consist of foreign manufactured goods. Much of its raw silk goes to France; its merino wool to England.

Cotton-spinning is the main industry in Catalonia, chiefly in the towns of *Barcelona* (which is the great manufacturing town of Spain, second in size to Madrid, pop. 250,000) and *Tarragona*, on the Mediterranean coast; silk is woven at *Madrid* and *Toledo* in the centre, at *Valencia* (144,000) and *Barcelona* on the east coast, at *Granada*, *Seville*, and *Múrcia* in the south. Paper is made chiefly in *Barcelona*, and at *Gerona*, north-east of it. Among the many iron foundries of Spain, those of *Barcelona* are numerous; near *Bilbao*, in Asturias, where an apparently inexhaustible quantity of fine magnetic iron occurs in conjunction with coal, are the royal arms factories of Spain, which supply large quantities of cannon, guns, carbines, bayonets, and cuirasses for the army. *Toledo* has its great *Fabrica de Armas*, built in 1788, though long before that time Toledan blades had become famous. Tobacco manufacture is a monopoly of the state, and is carried on at seven great factories in *Seville*, *Madrid*, *Santander*, *Gijón*, and *La Coruña*, on the north coast, at *Valencia* and *Alicante* on the east coast. *Córdoba* is famous for its leather. Corks for bottles are very extensively made from the bark of the cork oak, which is abundant in the southern parts of the Peninsula.

13. Trade.—The trade of Spain, like its industries, is again reviving from the low point to which it had fallen. Situated between two seas, the country is admirably adapted for trade, and its coasts possess more numerous harbours than those of France. The customs duties levied in Spain are, however, heavier than in any other country of Europe, so that smuggling is carried on to a large extent. Internal trade has its centre at *Madrid*, the capital; the other chief trading towns of the interior are *Valladolid*, *Palencia*, and *Burgos*, in the Duero basin, on the most direct lines of communication with the ports of the north coast, *Zaragoza* on the Ebro, and *Granada* at the northern base of the Sierra Nevada. The great seaports of Spain are *Barcelona*, *Valencia*, and *Alicante*, on the Mediterranean coast; *Cartagena* (the chief naval port of Spain), *Málaga*, and *Cádiz*, with its sub-port of *Jerez* on the south coast; *La Coruña*, the centre of the Galician fisheries; the naval station of *Ferrol* opposite to it; *Santander*, the most direct outlet of Madrid to the north, and *San Sebastian*, on the shores of the Bay of Biscay. *Palma* on the south coast of Majorca, the largest of the Balearic Islands (about the same size as the county of Cornwall), has also a fine harbour.

The African ports of *Ceuta* and *Melilla*, on the coast of Morocco, belong to Spain.

14. The fact that until the year 1848 Spain had not a mile of railway, and that it now possesses nearly 4000 miles radiating outward from Madrid to all the chief seaports, is very significant of the recent progress made by the country.

Its communications are still, however, far behind those of the rest of western Europe; Belgium, for example, is ten times as well provided with railways as Spain. The mercantile fleet belonging to Spain numbers about 3000 vessels (Great Britain has 20,000).

15. The strange little republic of *Andorra*, occupying a high forest valley of the Pyrenees (about 150 square miles in area), in the north of Catalonia, dates its independence from the time of Charlemagne, who gave it freedom in return for the services rendered by its people in the Moorish wars. Its little pastoral population of about 12,000 is governed by a council-general of six members, under the protection of France, but belongs to the bishopric of Urgel in Catalonia.

16. The famous rock of *Gibraltar*¹ has belonged to Britain since 1704; it is about 3 miles long, and rises to 1400 feet; every point of it bristles with defensive works and artillery, galleries and batteries hewn in the solid stone. A garrison of about 5000 men is maintained. With the town beneath the fortress, the possession has about 25,000 inhabitants.

3.—PORTUGAL.

Portugal, occupying the south-western sixth of the Peninsula (34,600 square miles), is a somewhat larger country than Ireland; but its population (4,350,000) is much less.

17. **Government.**—The constitution of Portugal dates from 1826. Its crown is hereditary in the female as well as the male line; its legislature rests in the Cortes, a Parliament of two chambers, the "*Câmara dos Pares*" or House of Peers, nominated by the Sovereign, and the "*Câmara dos Deputados*" or House of Deputies, chosen by the people. The executive authority is vested in the Sovereign and his responsible Cabinet; the seat of government is at the capital, *Lisbon* (204,000), the largest city of Portugal. The old provinces of Portugal are subdivided for administrative purposes into seventeen districts.

The provinces are—

Entre Dóuro e Minho, the maritime province between the Dóuro² and Minho rivers, in the north.

Tras os Montes, across the hills, inland from the former.

Beira alta or upper, and *Beira baixa* or maritime, south of the former.

Estremadura, central.

Alentejo and *Algarve*, in the south.

The Azores Islands and Madeira are considered part of the home possessions of Portugal.

18. **Products and Industries.**—Agriculture in Portugal flourishes only in the northern province of Minho, and in Algarve in the south—wheat, maize,

¹ *Jebel Tarik* = Tarik's Mountain.

² Dóuro in Portuguese = Duero in Spanish.

and barley being the chief crops. The vine is grown everywhere, but the Douro basin gives the most valuable *port wine* (or Oporto). Oranges, figs, olives, chestnuts, are grown in great profusion. The coast fisheries of sardines and tunny form an important industry. The mines and forests of Portugal are more neglected than even those of Spain; the yearly product of the former is unimportant, but salt is obtained in large quantity from the coast lagoons, and is in great request abroad. The most extensive forest in the country is that of *Leiria*, on the north slope of the Sierra da Estrella, which has perhaps 20 millions of pine trees. This, and the smaller forest of *Busaco*, in the valley of the Mondego, north-east of Coimbra, famed for its tall cypresses, belong to the state.

19. *Manufactures.*—*Linen* is woven in almost all parts of Portugal; *cottons* are made largely at *Oporto* and *Lisbon*; woollens in the district of *Castello Branco*, between the Estrella mountains and the Tagus, about *Guarda* on the opposite side of the Sierra, at Oporto, and Lisbon. *Bragança* (which gives its name to the reigning family), in the north-east corner of the state, is in the midst of the most important *silk* district of the country.

Most of the trade of Portugal, and nearly all its import traffic, is with England. *Lisbon* and *Oporto*¹ are at once the seaports and trading centres of the country; the former rises on an amphitheatre of heights above the north side of its splendid port, formed by the widening estuary of the Tagus, and will always be memorable for the great earthquake which shook it into ruins in 1755. Unlike Madrid, where every one is Spanish, the cosmopolitan port of Lisbon is thronged with white and negro, English clerks, bearded Jews, and weather-beaten sailors of all nationalities. Oporto is busiest in sending the port wine of the Douro valley to England.

20. The high volcanic cluster of the nine islands of the Azores² lies out in the Atlantic, 800 miles from the coast of Portugal; the largest of them, St. Michael, is upwards of 200 square miles in area, and has the chief town of the group, *Ponta Delgada*; the islands supply immense quantities of oranges and pine apples for the London market.

21. The beautiful island of *Madeira*,³ famous for its delightful climate, lies nearly 400 miles out from the coast of Marocco; it is high and precipitous, the lower slopes are covered with tropical plants, vines, and sugar cane. Its people are mixed Portuguese, Moorish, and Negro.

4.—ITALY.

1. The alpine peninsula of Italy, reaching down into the Mediterranean, the central one of the three which form the southern extremities of Europe, with the islands of Sicily and Sardinia, which belong to it politically, may be compared in extent (114,400 square miles) with the British Isles, though it is somewhat less than these.

From the northern barrier of the Alps, where they fall steeply round the low plain of Lombardy and Venetia, in the north, and where Austria, Switzerland, and France touch upon the confines of Italy, to where the promontory that terminates in Cape Leuca runs out to form the Strait of Otranto and the Gulf of Taranto, in the south, is a distance of nearly 700 miles (Shetland to Land's End). The lowland in the north, between the French and Austrian

¹ O Porto = the port, referring to an ancient town named Cale, which is now over-spread by the modern town. Oporto gives its name to the whole country, *Portus Cale*.

² Agor, a hawk.

³ = Wood, timber.

frontiers, has a width from east to west of 300 miles, but the general breadth of the peninsula, between the Adriatic and the Tyrrhenian Seas, does not exceed 100 miles, or about the distance between Hull and Liverpool.

2. Relief and Rivers.—The northern plain of Italy (generally but a few feet above sea-level), round which the Alps rise like a wall, is believed to have been at one period an extension of the Adriatic Gulf, which has been gradually filled up with rich alluvial soil worn down from the steep sides of the mountains by the snow-fed torrents. The *Po*, the only great river of Italy, winds through the lowland, and, fed by its many tributaries (the largest of which are the *Ticino* from Lago Maggiore, the *Adda* from *Lake Como*, the *Oglio* from *Lake Iseo*, and the *Mincio* from the *Lago di Garda*), is ever carrying fresh material down from the heights to add to its delta in the Adriatic. In this way the plain has extended eastward by many square miles since the old port of *Adria*, now an inland town, gave its name to the gulf. The *Etsch* or *Adige*, descending from the mountains of the Tyrol and reaching the sea on the north side of the delta of the *Po*, may thus also in time become a tributary of the main river.

The form of all the more strictly peninsular part of Italy is given by the central range of the Apennines, which extends continuously through its length from the maritime Alps of France, round the head of the Gulf of Genoa, down to Cape Spartivento in the extreme south.

The Apennines have their highest part, called the *Gran Sasso d'Italia*, "the great rock of Italy" (Monte Corvo, 9810 feet), near the centre of the long range. The slopes of these heights to the sea, north-east and south-west, are so short as to allow of only small rivers. The largest of these are the famous *Tiber* (Tevere), which flows through Rome; and the *Arno*, on which Florence stands. Among the lesser lowlands of the peninsular part of Italy are the plain of the *Arno*, which opens out on the coast to the marshy *Maremma*; ¹ the bare *Campagna di Roma*, north of the city, also opening into the unhealthy maritime plains which extend from north of the Tiber mouths for sixty miles along the coast to the *Pontine Marshes*; and the plain of Naples, called the *Campagna Felice* from its fertility.

Nearly parallel with the southern part of the Apennine range, and westward of it, there appears a more recent chain of isolated volcanic heights. Chief of these, on the peninsula, is the cone of *Vesuvius* (4160 feet), which rises abruptly from the Campagna of Naples, above the old cities of Herculaneum and Pompeii buried by its lava streams and ashes. North of Rome, in this volcanic region, the round lakes of *Bolsena* and *Bracciano* occupy the craters of old volcanoes. Carrying the line southward, across the Tyrrhenian Sea, we come to the volcanic group of the *Lipari Islands*, with the ever-active volcano of *Stromboli*; and farther on to *Mount Etna* (Mongibello), in Sicily, the highest of European volcanoes (10,840 feet). Almost all the rest of Sicily, not volcanic, is covered with mountains of moderate elevation, the main line of which extends along the northern side of the island from east to

¹ *Maremma* or *Maritima* = maritime district.

west as if in continuation of the course of the Apennines across the narrow Strait of Messina.

The island of *Sardinia*, separated from Corsica by the Strait of Bonifacio, 150 miles long from north to south, is for the most part mountainous, especially along the eastern side, in the middle of which rises the granitic *Mount Genargentu*¹ (6292 feet). The mountainous south-western corner of the island is separated from the larger highland on the north-east by the plain called the *Campidano*, which reaches across from the Bay of Cagliari on the south coast, to that of Oristano on the western.

The island of *Elba*, famous as the place of Napoleon's exile, between Corsica and the peninsula, 18 miles long, is high, its western part being formed by *Mount Capanne*, which rises to 3343 feet. *Capri*, south of the Bay of Naples, where the Emperor Tiberius passed the last ten years of his life; and *Caprera*, Garibaldi's home, on the north coast of Sardinia, are other noteworthy islands.

3. Climate and Landscape.—The north of Italy has the excessive climate of the temperate region of continental Europe; in the central parts of the peninsula the climate becomes more genial and sunny, and to the south almost tropical.

The plain of Lombardy, with an average temperature of 55° F., has winters which are as cold as those of the Scottish lowlands, and the lagoons of Venice have been frozen over; but its summers are as hot as those of Rome or Nice. The changes are few; rain lasts for weeks together in autumn, but in summer the blue sky is never clouded except when a violent thunder and hail storm occurs. The east wind brings up clouds from the Adriatic, and the west wind from the Alps dispels them; from the abundance of water in the streams and canals of the plain the east wind causes November fogs just as it does in the Thames valley. About Florence the winters are much milder, with the same summer heat, and this difference between the seasons decreases still more to southward. The summer of the Campagna of Rome, when a heat mist rises over the plain, is almost unbearable; in January the sky is blue, the mornings may be frosty, and fresh spring air blows over the land; in March the trees are already leafy, and in June the harvest begins; in July everything withers under the excessive heat, till the autumn rains revive the land. In Naples and South Italy the sky is cloudless for months together, and the air is so pure that distant plains appear to be close at hand. The chief faults of the Italian climate are the cold mountain winds called the *Tramontana*, like the mistral of south France, and the *Bora* of the north Adriatic, and, in contrast, the hot *Sirocco* which occasionally blows from the African deserts, besides the malaria of the western coast marshes and of the Venetian lagoons.

4. Round the lakes at the base of the steep southern slope of the Alps Mediterranean forms of vegetation appear; the chestnut reaches up to 2500 feet, above that comes the belt of beeches and oaks, still higher the pine woods, then the pretty alpine plants and high pastures. Scarcely any part of the world is so covered with irrigating canals (*naviglies*) as the highly cultivated plain of Lombardy, so that the whole of it appears like a great garden. At the northern base of the Apennines the Mediterranean flora of laurels and myrtles, cork oak and cypress, covers the first slopes; above that groups of oaks appear, then beech woods and the extensive summer pastures which

¹ *Janna argentii*.

reach all over the Apennine range. The Apennines have no permanent snows, but their highest summits are frequently snow-clad between October and May, and send down cold breezes into the warm valleys.

On the Mediterranean slope round the coasts of the Gulf of Genoa, called the *Riviera*, the characteristic vegetation of the lowlands of the southern portion of the peninsula appears; the roads are lined with aloes, and lead through olive woods and orchards of almonds, oranges, peaches, figs, apricots, and now and then of date palms. In Sicily the vegetation takes an African character, and many tropical forms flourish; it is not a well-wooded island, but forests occur here and there.

5. People.—The present homogeneous population of Italy (30 millions) has arisen from a perfect chaos of races. The ancient *Ligurians* of Iberian race and the *Umbrians* of the north were joined, from an unknown quarter, by the strange people called *Etruscans*¹ or Tuscans by the Romans, who exercised such an immense influence on European civilisation. The *Greeks* peopled the south, and held Sicily along with the Phœnicians; the *Romans* spread out from the centre of the peninsula to extend their conquests far beyond its limits; then the *Goths* and *Franks* poured in from the north, and after them the *Longobards*, who gave their name to Lombardy. The *Savoyards* and *Waldenses* of the valleys of Piedmont along the French border appear to be of Gallic descent. Insular Sardinia was free from the irruptions of the northern people, but came under the influence of the Greeks, the Arabs, and then of the Spaniards.

Here, as in France and Spain, the Roman language endured and prevailed over all others, and now the people of Italy have one language and literature, the Italian descended from the Latin. Its dialects show traces of the mixture of nationalities, but the Tuscan has now become classic, for the great writers (Dante, Boccaccio) were Tuscans.

6. Education and Religion.—Although in ancient times and in the middle ages men were born in Italy who left great masterpieces of art in sculpture, architecture, and painting, as models for all time, and though modern Italy has talented musicians and poets, the greater part of its inhabitants still remain without even the rudiments of education; beggars are very numerous, in south Italy especially, where even yet brigandage exists.

Great efforts are being made, however, by the young kingdom to improve this state of things, and much of the property confiscated by the Government from the many monastic establishments has been devoted to the purposes of public education. Higher education is well provided for, since there are not fewer than 22 universities in Italy, the oldest of which are those of *Bologna*, *Parma*, *Padua*, and *Turin*, on the northern plain; of *Perugia*, near the centre of the peninsula; of *Florence*, *Pisa*, *Siena*, *Rome*, and *Naples*, on the south-western slope of the Apennines.

The Roman Catholic is the state religion of Italy, but since the suppression

¹ *Exteri* = strangers.

of the temporal government of the pope the power of the clergy has been subordinated to that of the civil government, and perfect religious freedom has been secured.

7. Previous to 1859, Italy was divided into a number of separate states : in the north were the kingdom of Sardinia, and the Lombardo-Venetian state under the dominion of Austria ; the grand-duchy of Tuscany, and the duchies of Parma, Modena, and Lucca ; the Pontifical States extended from sea to sea, and from the river Po on the north to the Gulf of Gaeta on the south-west ; lastly, the kingdom of the Two Sicilies, with Naples for its capital, occupied the whole of the southern region. Aided by France, Sardinia obtained possession of Lombardy, after the victories of *Magenta* and *Solferino*, in the campaign of 1859, when the departments of Nice and Savoy became parts of France. Early in the year 1860 the duchies and the Emilian provinces of the Papal States were added to the kingdom of Sardinia, and in March of that year Victor Emmanuel assumed the title of King of Italy. A swift conquest of the Neapolitan kingdom on the south by the patriot Garibaldi added this also to the new kingdom. Umbria and Ancona were next incorporated, and the States of the Church became reduced to the five departments round Rome.¹

After the Austro-Prussian war of 1866, Austria agreed to the surrender of Venetia also to the Italian kingdom. Now for a time the remaining Pontifical territories were protected from further diminution by the influence of France and the presence of an armed force from that country ; but on the outbreak of the war with Germany in 1870 the French troops were withdrawn, and after but a feeble resistance the Italians entered and took possession of Rome, thus completing the unification of Italy as one kingdom.

8. **Government and Divisions.**—The present constitution is an expansion of that which was granted to his subjects in 1848 by the king of Sardinia, from which country as a nucleus the unification of Italy spread out. According to it the executive power rests with the sovereign and his responsible ministers ; the legislative power is exercised conjointly by the king and a parliament of two chambers—the Senate of princes and members nominated by the king, and the Chamber of Deputies elected by the people. For administrative purposes the kingdom is divided into 69 provinces, in each of which the executive power is intrusted to a prefect appointed by the ministry. As in the case of other countries, the larger and older divisions of the country, called *Compartimentos* in Italy, are of much greater historical and geographical interest than the modern ones.

These are as follows :—

Piedmont (Turin) and *Liguria* (Genoa) in the north-west, which formed the continental part of the former kingdom of Sardinia.

Lombardy (Milan) and *Venetia* on the great plain of the north.

*Emilia*² on the northern slope of the Apennines to the Po,

¹ Rome, Viterbo, Civita Vecchia, Velletri, and Frosinone.

² Named from the old *Via Emilia*.

including the former duchies of Parma and Modena, and the Romagna (Bologna).

Tuscany, the former grand-duchy (Florence), between the Apennines and the Mediterranean opposite Corsica, which includes the island of Elba.

Umbria (Perugia), the central province of the broadest part of the peninsula.

The Marches of Ancona, the eastern slope of the Apennines to the Adriatic opposite Umbria.

Latium or Rome, the coast slope to the Tyrrhenian Sea on each side of the Tiber.

The Abruzzi and Molise, the compartment which extends across the highest part of the Apennines to the Adriatic coast opposite Rome.

Campagna (Naples), the western coast-land south of Latium, extending round the Gulfs of Gaeta, Naples, Salerno, and Polycastro.

Apulia, the territory extending along the Adriatic and Straits of Otranto from the promontory of Monte Gargano to Cape Leuca.

Basilicata, the country at the head of the Gulf of Taranto.

Calabria, in the extreme south of the peninsula, between the Gulf of Taranto and the Tyrrhenian Sea.

Sicily and Sardinia, the insular provinces.

9. Products and Industries.—Of the whole surface of Italy it is estimated that 83 per cent is suitable for cultivation. The greatest proportion of agricultural land, however, lies in the great plain of Lombardy and the Campagna Felice of Naples. Notwithstanding this, the supply of corn grown in Italy is not sufficient for its wants, and more is imported from Russia, Egypt, and even from North America. Maize and wheat afford the staple food of the lower classes, as *polenta* and *macaroni*.

A sixth of the area of the kingdom is covered with wood or bush, the island of Sardinia having the largest forests of all the kingdom—the districts of Lake Como, of Southern Tuscany, and Genoa, being the best wooded parts of the mainland. The *olive* grows all over peninsular Italy, and enormous quantities of oil are produced, much being exported. All parts of the country are suited to vine-growing. Most *wine*, however, is made in south Italy and Sicily; most *horses* are bred in Lombardy, where *cattle* are most numerous in the dairy farms, which supply enormous quantities of *cheese* (Parmesan, etc.); Tuscany has most *sheep*; Sicily the finest *mules* and *asses*; Umbria the greatest number of *swine*. The coast fisheries of Italy employ between 5000 and 6000 boats, and fully 26,000 men. *Coral* fishers go out from Naples, Leghorn (Livorno), and Genoa to the coasts of the Balearic Isles and of Algeria and Tunis in large numbers.

The most important mineral product of Italy is the sulphur of Sicily;

iron is widely distributed, but is obtained in most considerable quantity in Lombardy and Liguria; *lead* is an important product of Tuscany; *sea salt* of the vicinity of Cagliari, the chief town of the island of Sardinia. Famous pure white *marble* is quarried at Carrara and Massa, on the north-west coast-land of Tuscany.

10. **Manufactures.**—The zenith period of Italian manufactures, when Milan was famous for its wool-workers, Venice for its dyes, Florence for its cloth, has long since passed away, and in this respect Italy now occupies a low position.

Silk-growing, spinning, and weaving is now the most important branch, and in this the towns of Lombardy—*Bergamo*, *Como*, *Milan*, *Turin*—take the lead, followed by those in the plain round *Naples*, and by *Catania* and *Palermo* in Sicily. *Glass*-making has also fallen from its old position; the works at *Intra*, on Lago Maggiore, and the manufacture of beads and mosaics at *Venice* (Murano), are, however, still very important. These beads serve for coin in Africa. *Porcelain* is now made chiefly at *Milan* and *Florence*; *straw hats* at *Vicenza* in Venetia, and in Tuscany, whence they come to us as *Leghorn* hats, from the port at which they are shipped.

11. **Trade.**—The great advantages of the peninsular position of Italy on the Mediterranean are modified by the presence of the great mountain barrier which shuts the country off from the rest of Europe. Hence the eagerness of its statesmen and men of business to complete the railways under or over *Mont Cenis*, the *Brenner Pass*, and the *St. Gothard*, two of which are already finished, and bring the cities of Turin and Milan, as well as the great ports of *Genoa* and *Venice*, in direct communication with the Continent. The external commerce of Italy is chiefly carried on with France, Britain, Austria, and Switzerland. Corn and cotton goods are the chief articles required from abroad. Silk and oil and sulphur are the chief articles with which Italy supplies other lands, and the country possesses about 11,000 ships that make long voyages. The chief seaports of the country after *Genoa*, "the Superb," which is the busiest of all, are in order round the coast—*Livorno*, or Leghorn, the port of Tuscany and Florence; *Civita Vecchia*, the port of Latium; *Naples* (the second in business in Italy), with *Castellamare* on the south side of its bay; *Messina*, on the Sicilian side of the Strait named after it, with one of the finest harbours in Europe, beside the eddy which was feared as the whirlpool of Charybdis in ancient times; *Palermo*, "la Felice," in the vale of the Golden Shell, on the north coast of Sicily; *Catania*, on the east coast of the island. Coming round to the Adriatic coasts we reach the port of *Brindisi*, a notable point in the most direct route from western Europe to Egypt and the East. The most important line of railway in Italy, that leads from the plain of Lombardy all down the east side of the peninsula, has the port of Brindisi as its objective point. Farther north in the middle of this coast is *Ancona*, the port of the Marches. Lastly we come to *Chioggia* and *Venice*, the city of canals and bridges, on the coast lagoon of the north of the Adriatic.

12. The Italian navy is a strong one, and possesses two of the most powerful men-of-war yet constructed, each carrying four 100-ton guns. The naval arsenal of Italy is at *Spezia*, between Genoa and Leghorn. *Mantua*, on the Mincio, in the east of the plain of Lombardy, is one of the strongest fortresses of Europe, and with *Peschiera*, at the point where the Mincio leaves the Lago di Garda, *Verona*, and *Legnago*, on the Adige, forms the famous "*Quadrilateral*."

13. The wonderful beauty of its site and the fertility of the surrounding

plain, with its maritime commerce, have made *Naples*, the former capital of the kingdom of the Two Sicilies, the most populous place in Italy (451,000). *Rome* (312,000), on the seven hills, owes its greatness rather to its military and political importance from the oldest times, its triumphs and the treasures which flowed to it as the seat of the sovereign pontiff of the Catholic Church, and has now only half as many inhabitants as Naples. Since 1870 the territorial possessions of the Pope have been limited to the portion of Rome which lies west of the Tiber, named the Citta Leonina, which includes the Vatican, the church of St. Peter, the Borgo, and the castle of St. Angelo. Rome is now the capital of the kingdom. *Milan* (262,000) and *Turin* (214,000), on the fertile northern plain, come third and fourth; then, in order of size, *Palermo* (232,000), *Florence* ("La Bella," 168,000), *Genoa* (163,000), and *Venice* (125,000).

14. The only district in Italy that has not yet become one with the kingdom is the little republic of *San Marino*, on the north-east slope of the Apennines, between Bologna and Ancona, one of the most ancient and the smallest states of Europe, which had its pigmy feuds and factions even in the middle ages. Saint Marinos is said to have settled here in the fifth century, and to have founded the state. It is a craggy height only 24 square miles in area, with 8000 people, governed by two captains-general and a senate.

15. The group of the *Maltese islands*, Malta, Gozo, and Comino, 60 miles south of the coast of Sicily, belongs geographically to Italy, but politically to Britain. Malta (or *Melita*), the largest (17 miles long), has the impregnable fortified and splendid port of *Valetta*, with dockyards and arsenal, on its north coast, where a garrison of over 5000 men is ordinarily maintained. The islands form an admirable naval station for a fleet commanding the Mediterranean, and a military point for the concentration of a force which could protect the great highway to Egypt and India. Malta is thus one of the most important dependencies of Great Britain and the head-quarters of the British Mediterranean fleet. The islands have about 153,000 people, and are under a British governor and council.

5.—GREECE.¹

1. The extremity of the third peninsula of southern Europe is occupied by the kingdom of Greece, the land of the ancient Hellenes, called by them *Hellas*, and first named *Græcia* by the Romans. Greece is essentially a country of rugged mountains and valleys, peninsulas, gulfs, and islands. It comprises a northern, or more continental portion, called *Rumelia*, and the peninsula of the *Morea* (Peloponnesus), joined to the mainland by the Isthmus of Corinth, which is only four miles wide at its narrowest; besides a large share of the islands of the *Ægean Sea*, and the Ionian islands on its west coasts. All of these make up an area (25,300 square miles) which might be compared with that of Scotland north of the lowland between the Forth and Clyde, the length of the country from its northern or Turkish border to the extreme south cape being about 250 miles.

¹ Thessaly and a slice of Epirus (6000 sq. m., pop. 293,000) have been surrendered to Greece in accordance with the Treaty of Berlin. The principal towns within this territory are *Arta*, *Trikkala*, *Larissa*, *Pharsala*, and *Volo*.

2. Its coasts form a succession of deep bays and gulfs. The north-west frontier is formed in part by the *Gulf of Arta*; the Morea is all but separated from the mainland by the *Gulf of Patras* and its inner *Gulf of Corinth*; the *Bay of Arcadia* indents the western side of the Morea; the Gulfs of *Koron* (or *Kalamata*) and of *Laconia* (or *Marathonisi*) run into the south of the Morea between the promontories which terminate in Capes Matapan and Malea; the Gulfs of *Nauplia* (or *Argos*), of *Ægina* (or *Athens*), break the eastern coast; the narrow channels of *Egripo* and *Talanta* separate the long island of *Eubœa* from the mainland; and in the north-east the *Gulf of Volo* penetrates into Thessaly.

3. The mountainous *Eubœa* or *Egripo* (called *Negroponte*¹ by the Italians) is the largest island of Greece—more than 100 miles long. North-east of it lie the *Sporades* or scattered islets, the largest of which are *Skyro* and *Skopelo*; within the Gulf of Athens lie *Salamis* and *Ægina*; south-east is the archipelago of the *Cyclades* (*Kyklades*), so called from their circling round the little island of *Delos*, sacred in old times to the worship of *Apollo*. The largest of these are *Andros* and *Tinos*, *Syra*, *Naxos*, *Paro*, *Milo*, and *Amurgo*, the remarkable volcanic island of *Santorin* being the most southerly of the group. The *Ionian islands*—*Corfu*, *Leucadia* or *St. Maura*, *Ythaka*, *Kephalonia*, *Zante*, and *Cerigo*—lie along the west and south coasts.

4. **Relief.**—The surface of Greece is everywhere mountainous, even down to the bold headlands of the coast, and its scenery almost everywhere presents striking views of sea and rugged heights. There are no definite ranges in the masses of heights which cover the country, unless it be in the coast range of Thessaly, including the famous *Olympus*, or in the *Pindus*, and its eastern branch, the *Othrys Mountains*, running out towards the Gulf of *Volo*; or in the *Taygetos* (or *Pentadactylon*, from its five fingers or peaks), and *Parnon* or *Malevo*, which run south in the Morea, forming the promontories which terminate at *Matapan* and *Malea*. Elsewhere irregular masses cover the land.

The culminating of all Greece is the famous *Olympus* (9750 ft.), which rises boldly from the *Ægean Sea*, in the coast range of Thessaly, and has for its neighbours the scarcely less famous *Ossa* (*Kissovo*) (5250 ft.) and *Pelion* (5130 ft.) The summits of the *Pindus* are far inferior to it in elevation. The highest of them is *Mount Kiona* (8240 ft.), which stands near the centre of *Rumelia* in the north. South-east of it is *Liakura*, the classic *Parnassus*, rising to nearly an equal elevation. In the Morea the highest point is *Mount St. Elias*, at the head of the central promontory of the south coast; many other points of the peninsula are nearly as high. The plains of Thessaly, between the *Pindus* and the coast range; of *Boœtia*, between the head of the Gulf of *Corinth* and the *Egripo* channel; and of *Messenia* in the south-west at the head of the Gulf of *Koron*, are the most extensive.

5. **Rivers.**—The streams and mountain torrents of Greece flowing down the steep valleys are necessarily short and unnavigable. They also vary very greatly in volume from the time of the autumn and winter rains to the heat of summer.

¹ A corruption of *Egripo* and *ponte* = bridge.

The only real river is the navigable *Salambría*, which gathers the streams that descend from the Pindus to water the fertile plain of Thessaly, and escapes to the sea between the classic heights of Olympus and Ossa (Kissovo), overlooking the Gulf of Salonica. Of the minor streams the largest is the *Aspropotamo* (anc. Achelous), which drains that portion of Epirus which has recently been assigned to Greece, and reaches the sea at the western corner of the opening into the Gulf of Patras. On the eastern side of Rumelia the *Mavro Potamo* (Kephissus) springs from near the base of Parnassus, and flows eastward to feed *Lake Topolias* (Kopäis), the largest of the many mountain lakes of Greece (ten miles wide), which is drained to the Talanta channel by subterranean passages. The *Rufia* (Alpheus), flowing to the Bay of Arcadia, is the largest stream of the Morea. Among the mountains of the north-east of the Morea flows the torrent now called the *Mavro Nero*, or Drako Nero, the *Styx* or Cocytus of the ancient Greeks, regarded by them with superstitious awe, and believed to be poisonous. All around is wild, naked, and solitary. The mountain walls of black, blue, or green slate have a weird and desolate appearance.

6. **Climate.**—Snow lies for two or three months of winter on the mountains of Greece, but is scarcely known in the deeper valleys and coast-lands. The summer sky is cloudless and bright, and the heat very great; and at this season the swampy valleys, such as that of Lake Topolias, become unhealthy from the malarious vapours. The sirocco is occasionally felt in the south; north winds blow cold. In general the climate is temperate and healthy.

7. **People.**—The inhabitants of Greece (1,980,000) are in the main the descendants of the old *Greeks*—of tall, slim stature, with aquiline nose, dark fiery eyes, and black hair. Devotedly attached to their country, they are as fond of their independence as were the old Highlanders of Scotland, and consequently are bitter enemies of the Turks. They speak the modern Greek tongue, which closely resembles the old.

A large admixture of *Albanian* mountaineers is found in the north of Greece. Their language is distinctly related with Greek. In Thessaly there are many Turks as well as Zinzars, and a good number of English and Italians are also resident.

8. **Religion and Education.**—The majority of the Greeks belong to the Orthodox Greek Church, the clergy of which, since 1833, owe nominal allegiance only to the Patriarch of Constantinople, but are under the real authority of the Metropolitan of Athens. A small proportion are Roman Catholics. In Thessaly Mohammedans are numerous.

The freedom of Greece from the oppressive rule of the Turks and its establishment as an independent kingdom is an event of comparatively recent times. Law and order and industry have been extended over the whole land, and brigandage may be said to be extinct, except in the districts only recently acquired from Turkey.

The Government has given much attention to public education, but although schools have been established on the German system of compulsory education, fully one-half of the adult population remain altogether illiterate. A university was opened at *Athens* in 1837, and is attended by about 1200 students.

9. Government.—According to the constitution, which was framed by an assembly in 1864, the executive power is vested in the King and his responsible Ministry; the legislature is a single Chamber of Deputies, called the *Boulé*, elected by the people, and meets at Athens, the capital. Previous to this, the country had been divided for administrative purposes into provinces or *nomarchies*, which correspond, in their names at least, with the divisions of ancient Greece. These are—

In *Rumelia*, or the mainland of northern Greece—

Thessaly, with a slice of Epirus, including the town of Arta.
Attica and Bœotia (Athens), and Eubœa, with the Sporades,
in the east.

Phthiotis and Phocis, central.

Acarnania and Etolia, in the west.

In the *Morea*—

Argolis and Corinth, in the north-east.

Achaia and Elis, in the north-west.

Arcadia, in the centre of the peninsula.

Messenia, in the south-west.

Laconia, in the south-east.

In *Insular Greece*—

The nomarchies of the Ionian Islands, Corfu, Cephalonia,
and Zante (Zakynthos), and of the Cyclades.

10. Products and Industries.—As may be understood from the mountainous character of the country and its recent enfranchisement, only about a third of the area of Greece is cultivable and not a half of this available land has been tilled.

Most of the mountain sides have woods which shelter wolves and foxes and wild boars, but in many parts the trees have been burned off, destroyed, or cut down for shipbuilding or for their resin. Wheat is more cultivated than any other grain, but barley is the staple food of the poorer classes, especially in the islands, and as the home supply is not sufficient, corn is imported from south Russia. *Tobacco* is largely grown in Thessaly. The vineyards are very extensive, and are always increasing, but the methods of preparing the Greek wines are still very rude. Mulberry trees and silk-cultivation are also widespread, but the most important product of Greece by far is its *currants* (a small grape),¹ which are grown all along the coasts of the Peloponnesus. The *honey* of *Mount Hymettus*, south-east of Athens, was famed in ancient times, and apiculture is at the present day so important that the tax on bees forms a considerable part of the national revenue. Of domestic animals sheep and goats are the most numerous. The little horses are hardy, and these, or mules, are used by all travellers in the country, who must carry their own necessities with them on pack animals, for there are very few carriage roads and no inns. Though Greece is not poor in minerals, it has no mines of importance. *Iron ore* is sent to Newcastle from the island of *Serpho* in the Cyclades, *Paro* has

¹ So called from the city of *Corinth*.

famous *marble*, *Zante* yields *petroleum* now as in the time of Herodotus. At Athens most of the printing and production of the literature of Greece takes place; it has also a little silk and cotton weaving, but manufactures of this kind are insignificant in any part of the country. The Greeks of the sea-coasts and of the islands are born seamen, fishers, and traders, known as such all over the waters of the Mediterranean.

11. The chief centres of trade are the *Piræus*, the port of Athens, joined to it by the only seven miles of railroad in the country, busy in supplying the capital; *Patras*, on the south coast of its gulf, which opens into that of Corinth, where most of the currants of the Morea are shipped; *Mesolongion* (Misolonghi), rendered famous by its siege, in 1826, on the southern shore of the same gulf; *Kalamata*, at the head of the Gulf of Koron, in the south, exporting silk and figs; *Nauplia*, at the head of its gulf, on the east side of the peninsula; *Volo*, the port of Thessaly; and *Syra* or Hermopolis, the second town in importance in the kingdom, the central point of the Cyclades, and an important station of several steamer lines. The little navy of Greece has its head-quarters at the island of *Poros*, in the Gulf of *Ægina*. Other towns of note are *Larissa* and *Trikhala* in Thessaly; *Egripo* or *Khalkis* on Eubœa; *Tripolitza*, the old capital of the Morea; and *Sparta*, in Laconia.

12. *Athens* (69,000), built on the margin of the olive and vine covered plain, where it rises to the hill of Lykabettos, is almost entirely a modern town, built since the liberation of the country in 1830, when it became the capital of the kingdom;¹ but the Acropolis, or Mars' Hill, the ruins of the Parthenon, of the temple of Jupiter Olympus, and of the temple of Theseus, remain to mark its ancient greatness. No other town in Greece is half so large.

6.—ROMANIA.

1. The well-marked division of the northern plain of the Lower Danube between the Transylvanian Alps and the river, equivalent to somewhat more than three-fourths of England and Wales in area (50,170 sq. m.), was conquered by the Turks in the beginning of the sixteenth century. Twice it passed under the control of the invading Russians, twice it was re-occupied by the Turks; but the influence of the northern power gained for it a government by its own native princes, and freedom from the oppression of the corrupt Greek or Fanariot princes of Constantinople who had previously farmed the land. The union of its two principalities, Walachia in the south and Moldavia in the east, as the principality of Romania, under one ruler, was granted by the Sultan in 1861, and till May 1877 the country paid tribute to the Porte. At that date Romania declared its independence of Turkey, and its freedom was confirmed by the Treaty of Berlin in 1878. By this treaty it obtained the district of the Dobruja south of the delta of the Danube, in exchange for the portion of Bessarabia alienated from Russia by the Treaty of Paris (1856), and now restored.

¹ In place of *Livadia*, on the border of Lake Topolias, the capital under Turkish rule.

2. Relief.—Romania consists for the most part of a great treeless steppe-like plain, occupying nearly the whole of the northern watershed of the Lower Danube ; behind this plain rise the wooded Transylvanian Alps. Between the northern bend of the river to its marshy delta and the Black Sea there rises the bare plateau called the Dobruja, partly grass-covered, partly swampy, without tree or bush. This famous old battle-ground is crossed by Trajan's double wall or rampart, built to keep the northern barbarians out of the Roman provinces, which was a serviceable line of defence in 1854.

3. Rivers.—All the rivers are tributaries of the Danube, and flow from the Carpathians and the Transylvanian Alps across the level steppe to join its left bank. The chief are the *Pruth*, which now forms the boundary towards Russia, the *Sereth*, and the *Aluta*. By the Treaty of Paris of 1856 the supreme control of the navigation of the delta mouths of the Danube was placed in the hands of an International Commission, which receives dues from passing vessels, and expends these in maintaining the navigability of its channels, especially of the chief or Sulina mouth. By the Treaty of Berlin this Commission is maintained in its functions in complete independence, below Galatz, of the territorial authorities. No vessel of war is now permitted to navigate the Danube below the Iron Gates, and all fortresses and fortifications on this part of the river are to be razed.

4. People.—The greater part of the population (5,400,000) are descendants of the amalgamated race formed by the intermarriage of the Roman colonists with the original inhabitants of Dacia ; these are the Romanians or Rumëni, in whose language three-fourths of the words are Latin. They are strong, well-knit men, with black hair, lively, but not very active. The mass of the people live in the greatest poverty ; their huts are worse even than the cabins of the Irish peasantry : a few thousand *Boyars*, nobles, or landed proprietors, really form the nation. Large numbers of Jews and Gypsies live among the Romanians. Almost the entire population belongs to the Orthodox Greek Church, but perfect religious equality is secured by the Berlin Treaty.

5. Government.—Its constitution, voted by a popular assembly in 1866, vests the executive authority in the reigning king and his council of ministers ; the legislative body consists of a Senate and a Chamber of Deputies ; the seat of government is at *Bucharest* in Walachia.

For administrative purposes Walachia is divided into eighteen, Moldavia into thirteen, districts, each under a prefect or governor.

6. Products and Industries.—In this great pastoral and

agricultural plain, cattle-rearing and corn-growing (maize, wheat, barley, rye) are naturally the chief and almost exclusive industries. The peasant makes his own rough clothing and cap of sheepskin ; his waggon requires no iron work ; and the corn is trodden out by horses ; all the imports are for the luxurious *Boyars*.

7. *Bucharest*, the capital (222,000), the entrepôt of trade between Turkey and Hungary, towards the south of the Walachian plain, is a thoroughly oriental town, a great chaos of huts and palaces and courtyards, with large gardens between. It is the seat of the Romanian university, and of the now important literature of the country. *Jassy* (90,000), the chief town in Moldavia, lies picturesquely on the slope of the hills, ten miles west of the river Pruth ; *Galatz* (80,000), the head-quarters of the Danube Commission, below the mouth of the Sereth, and *Braila*, a short distance above it, are the great grain ports and depôts of the plain.

The first railway in Romania was constructed in 1869, from Bucharest south to *Giurgevo* on the Danube ; now the capital is in railway communication with the rest of Europe through Galatz and Moldavia. The district of the Dobruja includes an important line of railway, which passes alongside of the ancient Roman wall from *Chernavoda* on the Danube to the port of *Kustenje* on the Black Sea.

III. SLAVONIC STATES.

THE BALKAN PENINSULA.

1. In the Balkan¹ peninsula, between the Adriatic and the Black Sea, we reach a part of Europe which has been, till recently, held subject since the fifteenth century by a people of Asiatic race, the warlike Osmanli Turks, differing in creed, in customs, and character in the widest degree from all the other nations of this part of the world, and incompetent to keep pace with their development in peaceful industries. Gradually the power of this once dreaded foreign race, numerically far inferior, has been losing its hold ; the territories nearest the main body of European States have passed, from being firmly subject, to be tributary only in name, or virtually independent of the Turk, "the sick man," who seems destined to be pushed out of Europe by the way he came. The Balkan peninsula, however, is but a small part of the empire of the Turks ; compared with the Turkish dominions in Asia and Africa, this European portion is only equivalent to about a twenty-fifth part of their extent ; its population to about a seventh.

Although the large territory (147,360 square miles) which lies south of the borders of Austria and Romania, marked out by the *Save*, the *Middle* and *Lower Danube*, extending to the frontier of Greece on the south, has little remaining unity in its political conditions, it will be convenient here to consider it first as one

¹ Balkan, Turkish, = mountain.

geographical division of the Continent ; and afterwards to separate it into its individual states.¹

2. Extent and Configuration.—In area the division under consideration may be compared to twice that of Great Britain ; it extends about 400 miles across from north to south and 500 east to west. It lies favourably between the branches of the Mediterranean, and has harbours on the Adriatic and the Ionian Sea on the west, on the Ægean and the Sea of Marmora in the south, and on the Black Sea in the east, from which the great natural highway of the Danube leads into the land.

South of the Danube a gentle ascent of undulating well-cultivated pastoral land, with dwarf oaks, leads up to the rounded heights of the *Balkan*,² on which beech and oak woods interchange with grass. The steep right bank of the Danube along the north edge of this slope is cultivated and populous ; between the northern bend of the river and the Black Sea, rises the bare plateau called the *Dobruja*, partly grass-covered, partly swampy, without tree or bush.

The long range of the Balkan curves round from the "Iron Gates" of the Danube parallel with the river to Cape Eminéh on the Black Sea coast. The *Koja Balkan* (= chief mountains, 7826 feet), west of the Shipka Pass, near the centre of the range, are the highest. Almost all the country west and south of the Balkan is high and mountainous. Most of its ranges take the direction of the western coast, and continue the ramifications of the eastern or *Illyrian Mountains* (the direct extension of the Julian Alps) down into Greece, and enclose between them high grassy meadows, lying about 2000 feet, on an average, above the Adriatic. The highest points of these ranges, often with wooded slopes rising to naked white peaks and pyramids, are the mountains called *Dormitor* in Herzegovina (8860 feet), *Mount Kom* on the inner border of Montenegro (9350 feet), the *Skhar Dagh* (or Scardus) in eastern Albania (about 10,000 feet), and the *Grammos Mountains*, between Macedonia and Epirus. Between the steep southern slope of the Balkan to the basin of Kezanlik and the valley of the Maritza, and the coasts of the Ægean, rises the broad mass of heights called the *Rhodope*, or *Despoto Dagh*,³ with several granite summits reaching over 7000 feet. Seen from the north this mass looks like a great plateau, with belts of oak and beech, fir and larch, skirting its slopes. Where the systems of the Rhodope, the Balkans, and the western heights run together, in the centre of the country, there rises the highest summits of all, the *Mus-alla* (9500 feet), and the *Rilo Dagh* (8960 feet), covered with pine forest, and clear of snow only in midsummer.

	Area in sq. miles.	Population.
1 Turkey proper, with Crete . . .	63,300	4,430,000
Tributary States. { Eastern Roumelia . . .	13,660	573,000
Bulgaria . . .	24,660	1,800,000
Bosnia and Herzegovina (in Austrian occupation) . . .	23,350	1,158,000
Independent { Serbia . . .	18,790	1,700,000
Montenegro . . .	3,600	286,000
	<u>147,360</u>	<u>9,947,000</u>

Thessaly and that portion of Epirus which have been ceded to Greece in accordance with the Treaty of Berlin (6000 sq. m., pop. 293,000), are not included above.

² The eastern part of the range is called *Eminéh Dagh* by the Turks = "the mountains which serve for a defence."

³ *Despoto Dagh*, Turkish = "monks' mountains," from the numerous convents.

Towards the *Ægean* the high crests run out into the remarkable peninsula of *Khalkis*, with its three prongs, one of which is terminated by *Mount Athos*, or the Holy Hill¹ (6350 feet). Through this arm of the peninsula Xerxes cut a canal for his ships to escape the stormy gales which render the navigation round the mountain dangerous. Opposite this the long peninsula of Gallipoli also runs south between the narrow Dardanelles and the Gulf of Saros; between these are the high islands of *Thaso* and *Samothraki* (where St. Paul touched on his way to Macedonia), but the latter is politically included in the Asiatic division of the Turkish Archipelago. Far to the south of the *Ægean*, however, the large island of *Crete*, or *Candia* (150 miles long), on which Mount *Ida* rises to 8500 feet, belongs to European Turkey.

3. *Rivers*.—The torrents which descend to the Adriatic from the mountains and plateaus of the west are of little value, except for their mill-driving powers, and for floating timber down from the hills. The most considerable of them is called the *Boyana*, the overflow of the large *Skadar* or *Scutari* lake (25 miles long), near the middle of the Adriatic coast-land; near its exit from the lake the *Boyana* is joined by the *Drin*; this river has its chief source in *Lake Okhrida* (18 miles long), which occupies one of the plateaus of eastern Albania, lying at an elevation of nearly 2300 feet above the sea. The *Vardar* from the *Skhar Dag*, flowing south-east to the Gulf of Salonica, is a large stream; but the *Maritza*, rising between the Balkans and the Rhodope, watering the great valley of Thrace, and curving round the latter mass of heights, is the most important river of the southern drainage. It is navigable, excepting in summer, as far as Philippopolis, 170 miles above its mouth. The great highway of the northern plain, as before said, is the *Danube*.

4. *Climate*.—The climate of the Balkan Peninsula is on the whole a favourable one. It becomes less so in proportion as the land rises to greater heights, and as it is exposed to the cold blasts of the north-east wind from the Russian steppes.

The climate of the northern plain is especially a continental or excessive one; the severe winter covers the plain with deep snow for four months, when the *Danube* also is frozen; spring begins in April, May is hot, July is characterised by storms and flooded rivers, filled by the rains and the melting snows; autumn being fine. South of the protecting barrier of the Balkans the myrtle survives the winter, and the orange, olive, and mulberry thrive. The Albanian slope to the Adriatic is perfectly sheltered from the cold north winds; the summers there are unbearably hot, and cold weather lasts only till March. Snow seldom falls in the lower valley of the *Maritza*, and the climate of these districts round the *Ægean* is specially agreeable, but the Bosphorus has been frozen in exceptional winters.

5. *People*.—No part of the world embraces such a strange mixture of antagonistic races—*Asiatic*, *Greco-Latin*, *Slavonic*, *Semitic*—as well as of languages and creeds, as this division of Europe. Of the 10,000,000 of people who inhabit this area, the *Osmanli* or *Turks* constitute only about a fifth part (2,000,000). They live in compact masses only in the south and east of the country, as round parts of the coasts of the *Ægean*, in the Rhodope highland, about Adrianople in the valley of the *Maritza*, and along the Black Sea coast-land between the Balkans and the delta of the *Danube*.

¹ From the large number of Greek monasteries on it.

After the Crimean war large numbers of the *Tatars* of the Crimea, allied in race to the Turks, came over the Black Sea to settle in the Dobruja, south of the Danube mouths, whence they are extending westward. The *Greeks* (about 1,210,000) form the most important element of the population in the south, and extend round the *Ægean* to Constantinople. The western central highlands towards the Adriatic are occupied by the *Albanians* (1,250,000), who are called *Arnauts* by the Turks, *Skipetars* by themselves; they are of Greco-Latin origin, and are supposed to be the descendants of the ancient *Illyrians*. From the south side of the Danube up over the Balkans to the limits of the Greek and Turkish districts on the coast lands of the *Ægean*, live the *Bulgarians* (about 2,500,000), a people of Finnish (Mongolian) origin, who migrated hither in the seventh century, gradually becoming amalgamated with the Slavonic peoples whom they had conquered, adopting their language and customs.

Lastly we come to the purely *Slavonic* division of the peoples of this region (nearly 2 millions), the *Servians*, *Bosnians*, *Herzegovinians*, *Croats*, and *Montenegrins* of the north-western highlands. Among the more important of the minor elements of population found in European Turkey are the *Circassians* (*Cherkesses*), people of the Caucasus who crossed over into Turkey in numbers after the conquest of their native mountains by Russia in 1864; the *Armenians*, who are found as well-to-do traders in every town; the *Gypsies*, who, true to their nomad life and poverty, are found scattered among the *Bulgarians*, living in tents or huts in summer, and digging themselves into the ground in the cold winter; and the scattered *Jews*, most numerous north of the Danube.

6. Religions.—It is to be noted that the religious divisions of the peoples of the Balkan Peninsula do not correspond to those of race. The Turks are not the only Mohammedans, for large numbers of the subject races—of the *Bulgarians*, *Albanians*, and *Servians* especially—to escape oppression, turned converts to the creed of their rulers, and have since become fanatical followers of the Prophet; though the ties of nationality seem to remain stronger than those of religion.

Among the *Bosnians* of the north-west, all the nobles have become faithful adherents of Islam; but there are nearly three *Christians* in this division of Europe for every Mohammedan. The *Orthodox Greek Church*, under the Patriarch of Constantinople, counts the greatest number of adherents among the *Greeks* of the south, the *Albanians*, *Bulgarians*, and *Slavs* of the north-west. The *Armenian Church*, the Patriarch of which resides in Armenia, and the United or *Catholic Armenian*, which recognises the authority of the Pope of Rome, have also many adherents. Thus the Balkan Peninsula presents not only contrasts between Turks and non-Turks, but also between Mohammedans and Christians, and these again between Greeks and Catholics.

Though the majority of the population of Turkey is Christian, non-Mohammedans long remained under the most cruel oppression, and have even now obtained only the barest toleration under pressure from the Christian States of Europe. Christians were excluded from all official positions; they had no redress for wrongs, for the word of a Christian had no weight against that of a Turk; the possession of land was also forbidden to them, and as farmers they were obliged to pay a third of the harvest to the owner of the soil; and such heavy taxes were exacted that it is scarcely surprising that the flame of insurrection was continually breaking out here and there. The

European powers, held back by jealousy of one another, looked on inactively at these iniquities. Russia alone, whether out of purely philanthropic motives or not, was disposed to give effect to her sympathies with the oppressed peoples allied to her in race and religion, and the resistance to these efforts by England, who feared the presence of a great power at Constantinople between the two most important sections of the British Empire, brought about the Crimean war, in which Russian aims were for the time defeated. At the conclusion of this war a scheme of Turkish governmental reforms of the most liberal kind met the approval of the European powers; this document, however, remained absolutely a dead letter. In 1876, by mutual agreement of the European Powers, it was proposed to the Turkish Government that the reforms should be placed under the control of commissioners appointed by the Powers. The rejection of these proposals by the Turkish government brought about the Russo-Turkish campaign of 1877, in which all the eastern region, except Constantinople itself, was occupied by Russian troops; and in the subsequent Congress of European Powers at Berlin the political boundaries and relations of the country were greatly altered.

7. Political Divisions.—Previous to the Russian invasion of 1877-78, the greater part of the Balkan Peninsula formed European Turkey with its tributary states. Several of these, indeed, had already gained freedom in a greater or less degree from the Turkish rule. The treaty of Berlin in 1878, however, greatly altered the political relations of the different parts of the country, reducing the area under direct Turkish rule to less than half of the whole, besides confirming the independence and extending the limits of several of the formerly tributary states.

The independence of the state of *Romania*, in the great plain north of the Danube, was recognised. South of the Danube a new principality of *Bulgaria* was formed, embracing the country from the river to the crests of the Balkan range; this is a tributary principality with a Christian ruler elected by the people, the choice being confirmed by the Turkish Sultan, with the assent of the great powers of Europe.

South of the Balkans a second tributary principality named *Eastern Roumelia* was also formed. It extends between the Balkan and the Rhodope mountains, and eastward to the Black Sea, embracing the whole of the upper basin of the Maritza river. This province is placed under a Christian governor appointed by the Porte with the consent of the Powers. The mountain state of *Servia* was again promoted to the rank of an independent state, and its limits were extended southward to embrace the upper basin of the Morava river. The freedom of *Montenegro*, in the western mountains, was also confirmed, and a considerable addition was made to its territory. The small port of *Spizza*, on the coast of the Adriatic south of the former termination of the Dalmatian territory, was ceded to Austria, which power was also charged with the occupation and administration of the affairs of Bosnia and Herzegovina, adjoining her territory of Slavonia, for an indefinite period. Nearly all Thessaly and a slice of Epirus was ceded to Greece, as a reward for her abstention from war. Thus there remain under direct Turkish rule only the country called Rumili or Roumelia, the old Roman or Byzantine land in the south, embracing the greater parts of Thrace, Macedonia, and Epirus, besides Albania.

1.—SERVIA.

8. The little mountainous country of Serbia, between the western Balkans and the Illyrian mountains, on each side of the valley in which the *Morava* flows north to the Danube, is a relic of the great Servian monarchy of the fourteenth century, which fell before the Turkish advance. Its present area (nearly 19,000 square miles) may be compared with that of Switzerland. Its long struggles for independence gained it the right of self-government in 1829, but it remained still tributary and nominally subject to Constantinople till December 1877, when it proclaimed its independence of Turkey; its freedom, as we have seen, was confirmed by the Treaty of Berlin.

9. Its present ruler is the descendant of a line of leaders who have fought to throw off the yoke of Turkey. This prince, according to the constitution, holds the executive power with his ministers, and the legislative authority is vested in the "*Sovjet*" or Senate, nominated by the prince, and in the National Assembly or "*Skupshtchina*."

10. The greater part of the country is mountainous and wooded; it is full of forests and hills, hedged fields, and fresh meadows, forming pretty but never very grand landscapes. The Servian mountaineers in general are lazy and hate agricultural labour, so that nearly nine-tenths of the land is left under its primitive *woods* and *pastures*; agriculture and cattle-rearing are unimportant, but large droves of *swine* are fed on the acorns in the woods, and are driven to market in Hungary. The mineral treasures of Serbia are considerable; *gold*, *copper*, and *zinc* occur in the hills which reach towards the "Iron Gates" of the Danube, and coal beds extend along the river. The only large place is the capital, the fortress of *Belgrad* (28,000), on the Danube, which for three and a half centuries was the central point of contest between the Austrians and the Turks. It is an important place in the transit trade between the northern and southern countries.

2.—MONTENEGRO.

11. The first part of the Balkan Peninsula to free itself from Turkish bondage was the little principality which we know by its Venetian name *Montenegro*; ¹ with the additions made to its territory by the treaty of 1878 it is not as large as Devonshire with Cornwall, and occupies the western mountain region from the range which culminates in *Mount Kom*, to the narrow strip of Dalmatian territory which shuts it off from Cattaro, its natural harbour, and farther south to the Adriatic itself.

12. Its reigning prince is a descendant of the prince bishop who liberated

¹ The Turks call it *Karadagh*, the Servians *Czernagora*, all three meaning black mountains, from the Servian chief Czernoi, the black or the rebel, who took refuge here, or from the characteristic dark forest which formerly covered the mountain.

the country from the Turks in the end of the seventeenth century, since which time it has been virtually independent. The people (about 286,000) are divided into forty tribes, and all the men are trained as soldiers. The constitution, last modified in 1868, gives it the form of a limited monarchy, the *Hospodar* or prince having the executive, a Senate the legislative, power. The senate meets at the chief village of *Cetinje* (pron. Tzetinye). The territory ceded to Montenegro by the Treaty of Berlin includes the small fortified towns of *Nikshich* on the north and *Podgoritz*a on the south of the old territory, besides the more important trading harbours of *Antivari* and *Dulcigno* on the Adriatic coast. These latter, however, have a powerful Albanian element in their population.

3.—BOSNIA AND HERZEGOVINA.

13. The north-western mountain region of the Balkan Peninsula was embraced in the Roman province of Illyria, and suffered many vicissitudes after the division of the empire. Previous to the seventh century the portion of it known as Bosnia was governed by princes of its own, called *Bans*, who became dependent on Hungary. Conquered afterwards by the Turks, it was annexed to the Ottoman empire in 1522. At the end of the sixteenth century the Turks also mastered the southern portion of Croatia. As early as 1466 the Herzegovina¹ south of Bosnia and Croatia, which had been known as the dukedom of Saint Saba under the Venetian rule, also fell into the hands of the advancing Turkish invaders, and after being the battlefield of Christian and Mohammedan for more than two centuries, was finally annexed to the Turkish empire by the Treaty of Carlowitz in 1697.

These three conquered territories were formed into the Turkish province of Bosnia, the hereditary chiefs being deprived of their prerogatives and of most of their revenues. Since that time the country has been the scene of almost constant disturbances and rebellions by the brave and hardy mountaineers. So unstable has been the Turkish power in this territory, that the Congress of European powers at Berlin in 1878 agreed to the occupation of Bosnia and Herzegovina by the Austrian troops, and to their administration for an undefined future period by the Austrian government.

14. The country is entirely covered with well-wooded mountain ranges, with well-watered valleys between, on which grain and fruits are produced in great abundance. Game and fish abound, and the country is celebrated for its sheep, goats, swine, and honey bees. Though the country is rich in minerals, from its disturbed condition these have hitherto been entirely neglected, nor are there any good roads or any considerable manufactures in the land. The population is for the most part Slavonic (Bosnians, Croats, Morlachs), and their Bosnian language, somewhat different from the Servian, has been preserved pure, the Turkish never having passed into general use. In appearance the Bosnians are tall and strong, with fine expressive features and dignified bearing.

¹ That is the Herzog-thum or dukedom.

Their towns are generally divided into three portions—the *Grad*, or citadel; the *Varos*, or walled town proper, often surrounded by walls and ditches; and the *Mahala* or *Palanka*, or suburbs, inhabited by the lowest classes.

15. *Serai-Bosna*, or Sarajevo, is the largest town (21,000), and was formerly the capital of Bosnia and Turkish Croatia, and is the centre of trade in the country. *Travnik*, north-west of it, is an important fortress; and *Banyaluka*,¹ on the border of Turkish Croatia, is the most beautifully situated place in the territory. *Zvornik*, on the boundary river Drina on the east, is almost entirely a Servian town trading largely in timber. *Mostar*, on the Narenta, is the chief town of Herzegovina, and has one of the finest bridges in all this region, with high strong quadrangular towers at each end forming a single arch over the river.² *Trebinje*, in the southern corner of the country not far from the port of Ragusa, is surrounded by old Servian fortifications.

EUROPEAN TURKEY.

4.—BULGARIA AND EASTERN ROUMELIA.

1. By the Treaty of Berlin two large territories have been removed from under the direct authority of the Sultan of Turkey, to be formed into tributary principalities enjoying the right of self-government. These are *Bulgaria* on the northern slope of the Balkans to the Danube, and *Eastern Roumelia* on the southern descent to the basin of the Maritza in Thrace.

2. The province of the Danube or Bulgaria, ancient Moesia, is a fertile agricultural country, watered by the Isker, Osma, Yantra, and Lom, tributaries of the Danube, growing maize and wheat, and able to export large quantities of these by the port of Varna on the Black Sea. In rearing of herds of cattle and sheep it is not so prosperous as Walachia on the other side of the Danube. Buffaloes drag the native carts here as in Italy. The Bulgarian peasants are thicker set than the Romanians, lean and muscular, wearing a cubara or sheepskin cap in place of the fez. Though of Finnish origin, their customs and language have become entirely those of the Slavonic people whom they conquered. Most of them belong to the Greek Catholic Church.

3. The important towns of Bulgaria from west to east are, *Widin*, a busy trading town on the Danube near the Servian frontier; *Sofia* on a fine plain beside the river Isker in the south-west, formerly capital of the Turkish province; *Nicopolis*, on the Danube at the mouth of the Osma; *Plevna*, south-west of it, memorable for its siege in 1877; *Sistova*, a trading town on the Danube; *Tirnova*, south of it, the residence of the Bulgarian kings before the Turkish conquest; *Rustchuk*, the most important trading and manufacturing town on the Danube; *Shumla*, a strong natural fortress; and *Varna*, the port of the country on the Black Sea. The only railway as yet constructed in Bulgaria unites the three last-named places.

4. The constitution of the newly-formed principality of Bulgaria was determined by an assembly of notables at Tirnova, the old Bulgarian capital in the centre of the territory. The new State pays tribute to the Porte, and bears part of the public debt of the empire; but has a Christian government and a militia of its own, and its religious liberty is guaranteed.

¹ Banyaluka = Bath meadow.

² The name Mostar is thus probably derived from *Mostari* = old bridge.

5. *Eastern Roumelia* is formed out of the provinces of Slivno and Philippopolis, with part of that of Adrianople, and embraces the upper basin of the Maritza and of its tributary the Tunja, extending also eastward of the latter to the coast of the Black Sea round the Gulf of Burgas. With the exception of the portion of the Rhodope plateau which falls within it, the whole of this is a charming country of undulating ridges covered with green vegetation. Along the base of the steep slopes of the Balkan, on the north of it, lies the rose-growing country, in which most of the famous attar of roses is made.

6. The population in this newly carved out principality is also for the most part Bulgarian. The chief towns are—*Philippopolis*,¹ on the Upper Maritza, which begins to be navigable here for boats. This ancient town was founded by Philip, father of Alexander the Great, and was taken in 1360 by the Turks. *Kezanlik*, on the Tunja, at the base of the Balkan, and *Slivno*, or *Islimye*, farther east, also close to the steep face of the mountains on the north, are both great centres of the manufacture and trade in attar of roses. *Burgas*, on an inlet of the Black Sea coast, is the chief port of the new province.

7. Eastern Roumelia is now a self-legislating province under a Christian governor-general appointed by the Porte with the consent of the great European powers, and has its own militia. The Turkish Government, however, retains the right of occupying certain strategical positions within it.

5.—TURKEY PROPER.

1. The remaining portions of the Balkan Peninsula—extending south of the new boundaries of Montenegro, Servia, and Eastern Roumelia to the *Ægean*, and from the Black Sea and Sea of Marmora to the Straits of Otranto—is still under direct Turkish authority.

2. **Government.**—Here the Sultan is ruler, and his will is absolute in so far as it is not in opposition to the precepts of the Koran, the sacred book of the Mohammedans. He acts through the Grand Vizier, who is head of the temporal government and president of the state council of the *Sublime Porte*;² and through the *Mufti*, or Sheik-ul-Islam, the head of the Church and chief of the "*Ulemas*," a body which includes the clergy and the chief functionaries of the law, the interpreters of the Koran, on which all laws, civil and religious, are based.

3. **Divisions.**—The whole Turkish Empire is divided into *vilayets* or governments, each under a *vali* who represents the Sultan, and each subdivided into *Sanjaks* or provinces. Of these divisions there are five on the mainland of European Turkey (*Constantinople*, *Adrianople*, *Salonica*, *Kosovo*, *Skadar* or *Scutari*), and one insular, the island of *Crete* in the Mediterranean. The older divisions of the country are, however, more generally known. These are *Thrace*, the south-eastern region between the Balkans and Rhodope, across the valley of the Maritza; *Macedonia*, between

¹ Turkish, *Felîbê*; Bulgarian, *Plowdi*.

² So named in allusion to the eastern custom of dispensing justice at the gate—from the lofty gateway of the Seraglio or palace at Constantinople, opposite which the Grand Vizier resides.

the Rhodope, the Skhar Dag, and the *Ægean*; *Epirus*, on the western slopes of the Pindus range; and *Albania*, the western mountain region south of Servia.

4. Products and Industries.—Turkey is a country of great natural resources, but few similarly gifted parts of the earth are so much neglected. The greater part of the population, as may be understood from the foregoing paragraphs, has no interest in the cultivation of the land; labour, capital, and roads are very deficient.

More than half the area is arable land or meadow, but little more is cultivated than is necessary to supply the requirements of the people themselves. Yet the land yields so plentifully that every Turkish harbour exports grain; the *olive* is more especially cultivated in the maritime districts, and *olive oil* is the staple product of the island of Crete; the vine is grown and *wine* is made almost everywhere in a rough way; *cotton* is an important product of the southern districts and of Crete. The forests give abundant timber, and are the haunts of the bear and wolf. The riches of the people are chiefly in their *cattle*; the *horse* is carefully reared, but is inferior to the Arabian; *sheep* give clothing for all the people, the wool of Macedonia and Thrace being specially valued. Though iron, copper, lead, and salt are present, scarcely any mining is carried on.

5. Turkey cannot be said to be without manufactures, though these are of no great extent or importance. Wool is woven into rough cloth all over the land, and the Turkish carpets are famous; ropes for the Turkish ships are made from native hemp; silk-weaving flourishes in Constantinople and Salonica; guns are made and cannon founded in the Bosphorus suburbs of the capital. The trades of saddlers, swordsmiths, barbers, and bathmen are restricted to Turks.

6. Roads and communication of all kinds are exceedingly deficient in Turkey, so that the difficult transport of goods is maintained chiefly by pack animals; and riding Tatars or couriers maintain a system of posts. It is only since 1865 that any railways have been made in Turkey. There are now nearly a thousand miles of railroad in operation, the chief lines being those from Constantinople through Adrianople and Philippopolis and the upper valley of the Maritza; from Salonica to Uskub at the base of the Skhar Dag; and from Rustchuk on the Danube by the natural fortress of Shumla to the Black Sea port of Varna.

7. *Constantinople*, the capital (600,000), the ancient Byzantium (Stamboul of the Turks), takes its name from the Emperor Constantine, who made it the capital of the Roman Empire in the fourth century. Secure and enchanting in position, commanding the shores of Europe and Asia, and the traffic of two seas, its natural facilities for trade raised it to its great eminence in the East.

The narrow arm of the Bosphorus, the *Golden Horn*, bordering the promontory on which the city proper, terminating in the serai or palace-enclosure, is built, affords a safe and commodious harbour for the largest vessels, and is visited by about 20,000 ships in the year. Across this, bridges lead to the suburbs of *Pera* and *Galata*, the European or Frankish quarter, with the palaces of the foreign ambassadors; beyond which, along

the Bosphorus, lie suburb after suburb to *Boyukdere*, where the fortifications begin which guard the outlet of the strait to the Black Sea.

Salonica or *Selanik*, at the head of its gulf in the *Ægean*, is, after Constantinople, the largest town and the most frequented port of Turkey, sending out grain and wool, silk and tobacco. *Adrianople*¹ is the depôt and trading-place of the broad valley of Thrace. The railway north-west from Salonica leads to *Uskub*, at the south-east base of the Skhar Dag. *Prisrendi* or *Prisren*, at the north-west base of that range in Albania, is one of the richest and busiest towns of European Turkey; north of it is *Prishtina*, the most important town of old Serbia or Dardania. In Epirus, near the borders of Greece, *Yanina* is the chief place.

8. The island of *Crete* (3320 square miles) might be compared in length to the distance from London to York. Several groups of high mountains rise along its length, culminating in the central *Mount Ida*. Its climate is a very pleasant one; olive woods cover many of the slopes, and vines and southern fruits are abundant. Its staple product is olive oil. The language of both Christians and Moslems in the island is modern Greek.

Megalo Kastrol, or *Candia*, on the north coast, a fortified town founded by the Saracens, is the largest place. *Canea*, near the western extremity, also on the north coast, is the best port of the island. A little east of it is the bay of *Suda*, in which the Turkish Government has been constructing a Mediterranean naval station and arsenal since 1869.

6.—EUROPEAN RUSSIA.

1. We have already come upon *Slavonic* peoples living within the political limits of the German Empire, in greater numbers within the Austro-Hungarian monarchy, as subjects of the Turks in the north-west of the Balkan peninsula, and under independent princes of their own race in the recently freed States of Serbia and Montenegro. In Russia alone, however, have the Slavonic peoples raised themselves to the position of a great European power, incorporating other nationalities with their own.

2. **Extent and Configuration.**—It may give some idea of the enormous extent of the territory of European Russia (nearly 2 million square miles) if it is remembered that it covers a space which is more than equivalent to the united extent of all the other states of Europe that we have been describing. If we measure its vast area by that of England, we find that it is nearly 40 times greater.

From the shores of the Arctic Sea on the north to those of the Black Sea on the south the distance is 1700 miles. From the western border where Russia touches upon Scandinavia, the Baltic, Germany, Austria, and Rumania, to the natural frontier of the Ural belt on the east, the great plain has a width of about 1400 miles, or six times the distance between London and Newcastle. Vast as this territory is, it forms little more than a fourth of the area of the huge Empire commanded by Russia in Europe and Asia.

3. The general features and climate of this vast region, which occupies the

¹ Founded by the emperor Hadrian.

body of Europe as the other states do its peninsular members, have already been noticed in the general description of the continent (pp. 75-87). It may suffice to recall here the general lowness of the country. Within its high borders of the Caucasus range on the south and the Ural on the east, the only part of its surface that attains a height of over a thousand feet is the little group of the Valdai hills at the head of the Volga. The main divisions of its landscape are the frozen, treeless *tundras* of its Arctic coast-lands; the rock and lake plateau of Finland; the immense central forest region, the cultivated parts of which supply Europe with grain; and the treeless *steppes*, which lie across the south of the plain from the saline borders of the northern Caspian towards Romania on the west. While recalling also the magnificent system of natural waterways that ramifies over the huge plain (Volga, Dnieper, etc.), it is important to remember the disadvantage which Russian commerce suffers, in comparison with that of peninsular Europe, in having its seas on every side—the Arctic, the Baltic, the Black Sea coasts and those of the Caspian—closed by ice, for a longer or shorter period, during its rigorous continental winter.

4. **People.**—The enormous extent of Russia is more thinly peopled than almost any other part of Europe; on an average it has only about 36 people to a square mile of surface. England in comparison is more than ten times as well peopled; France more than five times. About four-fifths of the whole number of inhabitants ($74\frac{1}{2}$ millions) are of Slavonic race.

The dominant Russian division of the Slav peoples appears in three main sections: the *Great Russians* ($34\frac{1}{2}$ millions) of the centre and north of the country; the *Little* or *Malo Russians* (14 millions) (also called Ruthens, or Russniaks, or Red Russians) of the Ukraine¹ on the south-west, to whom belong the Cossacks or Kazaks (= armed horsemen) of the lower Don region in the south; and the *White Russians* ($3\frac{1}{2}$ millions) in the western provinces. West of the last named, in the basin of the Vistula, live the *Poles* ($4\frac{1}{2}$ millions), and on the borders of Romania, in the south-west, a small proportion of Bulgarians. Allied in race to the Slavonic peoples are the blue-eyed and fair-skinned *Lithuanians* (Litvani) with the kindred *Letts* and *Shmudes* (Samogitians) beside them, who are mixed with Finnish blood ($2\frac{1}{2}$ millions).

Most important in point of numbers among the non-Slav races included in the political division of European Russia are the fair-haired *Finnish peoples*² (over 4 millions), who occur in a western, or Baltic, and an eastern division; the former includes the Ests, Chudes, and Livs of the Baltic provinces, the Karelians, *Suomi*, and *Quenes* of Finland, and the Lapps (who call themselves Sahmelads) farther north; the latter, the Siryans, Permyaks, and Votyaks towards the Ural, and the Cheremis and Mordvins of the middle Volga basin.

Scarcely less numerous than the Finns are the peoples of *Turkish* origin within Russia. To these belong the Tatars of Kazan; the Nogai Tatars of the Crimea in the south, and the Kirgiz on the Caspian. The Bashkirs, Chuvash, and others, in the southern Ural, are tatarised Finns. The *Kalmucks* may be taken as the purest type of the Mongols; they are short, swarthy, broad-shouldered horsemen, black-haired and black-eyed, the eyes slanting down

¹ *Ukraine* (Slav., a frontier country or march), a name first given by the Poles to the frontier country towards the Tatars, afterwards to the fertile regions on both sides of the middle Dnieper.

² The name *Finn* is of foreign origin. The people call themselves *Suomelaiset* = lake or fen people, in reference to their lake-studded country.

towards the flat nose. In the tundra region of the Arctic shores dwell the dwarfed *Samoyed* pagans, the original people of all the northern Asiatic plain, now driven to the borders of the icy sea, living by hunting and by their reindeer herds. *Jews* (about two millions) are most numerous in Poland and in the south-western provinces between that country and the Black Sea; amongst foreigners the most prominent place is held by the *Germans* (nearly a million) of the Baltic provinces, and by the *Swedes* of Finland.

5. Religion.—Nearly 93 per cent of the people of Russia are *Christians*, and of these by far the larger proportion belong to the *Russo-Greek Church*, the established one of the State, which separated from the Byzantine Patriarchate in the sixteenth century. It differs from the Church of Rome in denying the spiritual supremacy of the Pope, in prohibiting the celibacy of the clergy, and in authorising the study of the Scriptures in the vernacular tongue.

The Emperor is the defender of the Church, and executes the judgments of its Synod, which takes the place of the former Patriarch. No member of the Russo-Greek Church may renounce his creed, on pain of detention for life in a convent. Among the minor religious bodies in Russia, the *Roman Catholics*, who have their greatest number of adherents in Poland, come first; the *Jewish* traders of Poland and the south-western provinces, who are not permitted to settle in Russia proper, next in numbers; then the *Protestants*, who are found chiefly in the Baltic provinces nearest to Germany; *Armenians*, in the south. Followers of the rites of *Shamanism*, the ancient belief of the north Asiatic tribes, sacrificing animals to propitiate evil demons, and of *Lamaism*, the corrupt Buddhism of Tibet, occur in smaller numbers along the Asiatic border. These are the broad religious divisions of the country; but it is not unusual to find towns which are as diversified in the religion of their inhabitants as in the languages spoken in them. Astrakhan, for example, has Greek, Roman Catholic, Protestant, and Armenian churches, many Mohammedan mosques, and a Lama temple. On Fridays the Tatars go to mosque; on Saturday the black silk kaftans of the Jews appear; on Sunday the Greek "kolokolniks" or belfries ring out.

6. Education.—From the close of the sixteenth century onward till 1861, the greater portion of the inhabitants of Russia were *serfs*, belonging either to the crown or to private individuals. By imperial decree in that year, coming into force in 1863, serfdom was abolished. Under these circumstances it is not surprising that the masses of the people in Russia are without education. That progress is being made in this direction is shown by the fact that, whereas in 1860 only two out of every hundred recruits for the army could read and write, in 1870 eleven per cent were found to have these acquirements.

Finland is in advance of all other parts of the empire in respect of education; it possesses a separate system; but the rest of European Russia is now divided into educational districts, which correspond to the seats of the Russian universities at *Moscow* (the oldest, 1755), at *Dorpat*, and *St. Petersburg*, in the Baltic provinces; at *Vilna* and *Warsaw* in the west; at *Kief*,

Kharkof, and *Odessa*, in the south-west ; and at *Kazan* in the east ; and considerable sums are devoted by the government to public instruction.

7. Russian became a written language only in the time of Peter the Great, when the dialect of Great Russia obtained the supremacy, and was first sharply distinguished from the old Slavic. It has a very rich vocabulary, and is spoken most purely about Moscow. The Polish language is one of the most widely spread branches of the Slavic, and surpasses all others in euphony and in brevity. The Finnish language presents striking points of resemblance to that of the Tatars ; it has a considerable literature, and the use of it is encouraged by the Russian government.

8. **Government.**—Russia is an absolute hereditary monarchy. The administration of the empire is entrusted to four great councils, which centre in the private Cabinet of the Emperor.

The first of these, the "*Council of the Empire*," has departments of legislation, civil administration, and finance ; the second, the "*Directing Senate*," is the High Court of Justice of the empire, and sits partly at St. Petersburg, partly at Moscow ; the third, the "*Holy Synod*," superintends the religious affairs of the empire ; and the fourth is the "*Council of Ministers*" (of foreign affairs, war, navy, interior, public works, etc.) The grand-duchy of Finland has a partly independent government, under a senate nominated by the "Emperor Grand-Duke," and chosen—one half from the nobles of Finland, half from the citizens and peasants. The government of Poland was absolutely incorporated with that of Russia in 1868.

The old ill-built and purely Russian capital, *Moscow* (602,000), with its *Kremlin*, or citadel (like the Acropolis of Athens or the Capitol of Rome), may be compared to the heart of the country ; *St. Petersburg* (668,000), the modern capital, a city of palaces and officials, on the Neva, protected by its island fortress of Kronstadt, is like the eye of Russia, which mirrors itself in and copies the outer world of western Europe.

9. **Political Divisions.**—For administrative purposes the empire is divided into general governments or viceroyalties, governments (60 in European Russia), and districts. The most widely recognised divisions of the country are, however, those which have been previously indicated, viz.—

Great Russia (Muscovy)—All the central and northern regions to the Arctic shores. Chief towns—Moscow, Tula.

Little Russia, or the Ukraine—In the south-west. Chief town—Kief (Kiyef).

Eastern Russia. Chief towns—Astrakhan, Kazan, Samara, Saratof.

South Russia—Along the Black Sea. Chief towns—Odessa, Nikolayef, Kishenef.

Western Russia—Including Volhynia, Podolia, and other portions of the former kingdom of Poland. Chief town—Vilna.

The Baltic Provinces—The coast-lands of the Gulfs of Finland and Riga. Chief towns—St. Petersburg, Revel, Riga.

The Grand-Duchy of Finland—In the north-west, next Scandinavia. Chief towns—Wiborg, Helsingfors, Abo.

Poland—In the west, next Germany. Chief town—Warsaw.

10. Products and Industries.—Excepting along the Tundra belt on the Arctic coasts, in Finland, and in the saline Steppes of the south-east, the cultivation of *grain* extends all over the great Russian plains.

Rye and barley, oats and flax, are the chief crops in the north; wheat and vines, hemp and tobacco, the products of the centre and the south. The south central governments, extending from the Upper Oka to the Ukraine on the Dnieper, may be regarded as the granary of Russia, for they produce a third of all its corn supply. Russia is thus most important of all as a grain-producing country: its *forests* extend over about 40 per cent of the surface—pine, and fir, and birch in the north; oak and elm and lime in the centre and south; and their *timber* is sent down the Niemen and Vistula to the Baltic, and to Arkhangel in the White Sea, in enormous quantities for the supply of western Europe. In Russia itself the larger proportion of the houses are built of wood. The Steppes of the south are the great *pastoral lands* of Russia, which possess more than 45 millions of *sheep*, most of them yielding fine wool; and fully 20 millions each of *cattle* and *horses*. Russian leather is famous. *Swine* are also kept in very large numbers all over the land: the export of bristles and brushes from Russia is very large. *Reindeer* form the wealth of the Lapps and Samoyeds in the north; *camels* of the Tatars in the south-eastern Steppes. Hunting the bear, wolf, fox, and deer, and trapping the sable in the forests for their skins, give employment to many: the Caspian, as well as the Sea of Azov, the Black Sea, and the great rivers, are rich in *fish*—tunny, sturgeon, salmon, anchovy. Most *caviare* is made at Astrakhan on the Caspian. The great mining region of European Russia is the Ural belt, which yields a greater profusion of metals—gold, silver, copper, iron, lead, and platinum—than any other part of Europe. *Coal* is mined in the basin of the Donetz, a tributary of the lower Don in the south, in the Vistula basin in Poland, round Moscow, and in the Ural, but the yield is insignificant in comparison with that of Britain or Belgium. The lakes round the north of the Caspian depression (Lake Elton especially) yield *salt* in great quantity.

11. Manufactures.—Agricultural and pastoral industries employ about 76 per cent of the inhabitants of Russia, manufactures only about 15 per cent; and almost all the workers are peasants, who turn to these occupations while the long winter holds the land.

Most manufactures are clustered round *St. Petersburg* and *Moscow*, where the largest *cotton* and *silk factories* are found. Flax-spinning and the manufacture of rough linen and hemp, and especially of sailcloth and ropes, is important and wide-spread, not only in the seaports, but in several of the inland towns. Most important of all the metal industries are the *ironworks* of Perm in the Ural region, of Petersburg, and of Poland. The imperial cannon-foundry is at *Petrozavodsk*, on the west shore of Lake Onega.

12. Trade.—Towards western Europe Russia sends out raw products, receiving back manufactured goods: towards Asia its relations are exactly reversed. The great navigable rivers facilitate traffic to the seaports in summer; in winter all the coasts are closed; but just at that time the snow covering the land renders

the transport of goods over it in sledges an easy matter, so that inland communications are busiest at this season.

The roads of the empire are well maintained, and since the first little railway was finished at Petersburg in 1838, sixteen thousand miles of iron way have been extended over the European part of the empire. Trade with Europe passes mainly through the ports of the Baltic—*St. Petersburg*, *Kronstadt*, *Riga* (103,000), and *Revel*; of the Black Sea, in the south—*Odessa* (185,000), *Taganrog* (the emporium of the trade of the Don), *Rostof*, and *Berdiansk*; and through *Arkhangel*, on the White Sea in the north; but also to a large extent across the western land frontier through Germany and Austria, mainly by two great highways of commerce which unite Petersburg and Moscow with *Warsaw* (309,000). The great eastern highway to Siberia, often crowded with endless caravans, passes from Moscow, through *Kazan* on the Volga, across the Ural at the fortified mining town of *Ekaterinburg*: the chief south-eastern routes cross the Volga at *Samara* (51,000) and *Saratof* (85,000), to pass by *Orenburg* to southern Asia. Through *Astrakhan* and by the Caspian, trade with Persia is maintained.

13. Within the country exchanges are effected at great annual *fairs*, each of which draws to it a busy concourse from all sides.

The largest of these, the greatest fair in the world, is held at *Nishni-Novgorod*, at the confluence of the Volga and the Oka, nominally from the 15th of July till the 15th of August, though its vast business cannot be restricted within these limits. Merchants (Persians, Hindus, Chinese), strangers, to the number of about 200,000, come from all parts of the world to this fair, to which vast quantities of goods of every kind are brought—tea, silks, skins and furs, prints, woollens, etc. The fair of *Irbit*, beyond *Ekaterinburg*, on the Asiatic side of the Ural in the government of Perm, for Siberian produce chiefly, held in February and March, is the next in importance. The great wool fair and horse market held at *Kharkof* (101,000), in the Ukraine, stands next; about 80,000 sledges come over the snow to this winter fair. *Kishenef* (102,000), near the Dniester, in Bessarabia, nearest to the Romanian plain (chiefly Jewish) is another great trading town of the Steppe region, owning immense herds, and dealing largely in wheat and tallow.

14. European Russia has nineteen *fortresses* of the first rank, its great arsenals being those of *Petersburg*, and its guarding fortress of the island of *Kronstadt*; of *Kief* (127,000), on the Dnieper, in the Ukraine; and *Nikolayef*, the strongly fortified naval port of Russia on the Black Sea, at the mouth of the Bug, not far from the great grain port of *Odessa*. The harbour of *Sevastopol*, in the south of the Crimea, was formerly the great Russian fortress and naval station in the Black Sea; but it was destroyed by the British and French in the memorable siege of 1854-55, and by the subsequent treaty of Paris its military works are not to be restored.

ASIA—GENERAL.

1. ASIA,¹ the main mass of the great continent of the old world (the East, the Levant, the Oriental or morning land, in contrast to the Occidental or evening land of Europe in the west), is of surpassing interest as the cradle of the human race, and of all religion, wisdom, and civilisation. Its enormous area (17,210,000 square miles) spreads out over nearly five times the extent of the great western promontory of Europe, and forms a third of all the land of the earth's surface.

Between *Cape Romania*, the terminal point of the Malay peninsula, which runs south into the warm Indian Ocean, and *Cape Chelyuskin*, which juts into the ice-covered Arctic Sea in the far north, there lies an overland journey of 5800 miles; and from the narrow water-line of the *Suez Canal*, joining the Red Sea to the Mediterranean, and separating Asia from Africa, to where *East Cape*, only 36 miles distant from the American shores, runs out to form Bering Strait, and to divide the great Pacific Ocean from the Arctic Sea, one might travel by land for 6700 miles, or for more than a quarter of the distance round the globe.

2. Whilst the low-lying northern side of Asia next the Arctic Sea is comparatively even in outline, the southern and eastern coasts, towards the Indian Ocean and the Pacific, correspond remarkably to the branching form of Europe.

Here, as there, three well-marked southern peninsulas appear—those of Arabia, of Hindustan, and Farther India: here, also, the amount of dismemberment increases towards the east. Arabia, like Spain, is most compact, and has the fewest islands round its shores. Ceylon recalls Sicily, and Farther India, like Greece, is the most broken of the three, with Malacca for its Peloponessus, and the Great East Indian Archipelago for its Cyclades and Sporades, with directions reversed: on the eastern front Kamtchatka, enclosing the Sea of Okhotsk, resembles the larger Scandinavian peninsula, with the smaller Baltic; Japan, with its enclosed waters, the British Isles with their North Sea. But the East and Yellow Seas of China, within the Corea, and the South China Sea, enclosed by the great islands of the archipelago, have no parallel on the European side.

3. **Lowlands.**—Asia is essentially the continent of great

¹ Carl Ritter believes that the name Asia extended to the continent from that of a people living on the north side of the Caucasus, whom Ptolemy calls the *Asaei*. Others derive it from a Hebrew or Assyrian root which signifies the "East, or the rising sun."

mountains and table-lands. It is only in the north-west that low-lands spread out very extensively. There the *Turanian and Siberian lowland*, separated from the plains of Europe only by the narrow belt of the Ural, extends from the shore of the Caspian away north to merge into the ice-covering of the Arctic Sea. On the west the plain has an enormous width, but farther east the mountain region, approaching nearer the icy sea, narrows the lowland till it becomes a comparatively small coast plain, sending branches southward along the great rivers, especially along the valley of the mighty Lena.

The surface of the great plain of northern Asia also exhibits widely different landscapes. Farthest on the south-west, from the Caspian to Bokhara or Turkistan, where the Sea of Aral and Lake Balkash appear as the relics of a great Mediterranean, large tracts of the plain are occupied by deserts of drift sand, such as the *Turkoman Desert* and the *sand-waste of Kizil Kum*, between the Amu and the Syr Daria; but where the rivers cross these, and whenever their waters can be drawn off for irrigation, the dreary expanse of the desert is relieved by the brilliant green of rich vegetation, as in the gardens round the cities of Samarkand, or of Khiva, which seem in contrast the very image of Paradise. About the parallels of 48° to 50° N. lat., the deserts give place gradually to the region of grassy steppes, where rain is less scanty. The southern part of this region of the Asiatic plain is known as the *Kirghiz Steppe*, occupied by the little, middle, and great herds of the nomadic Kirghiz, whose wealth is in their flocks of broad-tailed sheep and their camel droves. Herds of antelopes also gallop over these plains. Northward the *Steppe of Ishim*, on both sides of that tributary of the Obi, is also a great pastoral country of Western Siberia; and the *Steppe of Barabinsk*, between the Irtysh and Obi, with its endless lakes, yields salt for the whole region. In the hot summer, clouds of midges hover over the grazing herds, but winter brings a covering of hard frozen snow, over which the sledge caravans pass on their way to the winter fairs. Gradually, in about 55° N., the steppe begins to be covered with trees, and we enter the *forest zone*, with its woods of pine, and fir, and birch, sheltering innumerable squirrels, martens, and sables, bears, foxes, and reindeer. Here the Russian and Samoyed hunters carry on their winter fur campaign. Approaching the Arctic circle the trees thin out, and give place at last to the bare swampy levels of the *tundra region*, over which winter holds sway during the greater part of the year. In the tundras the nomadic Samoyed hunts and fishes, and hither, in the short summer, the reindeer come to crop the mosses, the only vegetation that can ripen in the rigorous climate. So level are the tundras, that along the coast in winter it would be difficult to tell where land ceased, and the ice-covering of the Arctic Sea began, were it not for the line of drift timber marking the shore. Here, also, the polar bear and Arctic fox roam about, and the frozen soil is like a great graveyard of the mammoth, whose curving tusks are regularly sought for by the Siberian ivory hunters.

The remaining lowlands of Asia occur isolated along the south and eastern borders of the continent. Farthest west is the great *plain of Mesopotamia*, once the seat of high civilisation, irrigated from the Euphrates and Tigris by innumerable canals, and cultivated like a great garden, so as to support a large population round the cities of Nineveh and Babylon, but now appearing as a great dry steppe, green with vegetation only in the wet season. Over it *the hot winds* are ever extending the sands of the Arabian desert, and nomadic ~~Beduins~~ *Beduins* and plundering Beduins have taken the place of busy citizens.

The next extensive plain we reach is that of Hindustan, between the Himalaya edge of the great Asiatic table-land and the Deccan plateau of Southern India. In this there are two widely different regions. Immediately east of the Indus, the plain which reaches from the Arabian Sea to the parallel of 31° N. is almost entirely occupied by the scantily inhabited *Indian desert*, with its strange succession of sandy ridges without a single stone, sometimes rising as high as 200 feet above the valleys between them, called the "*Thurr*," and the "*Put*," a region of hard level soil abruptly bordering on the former. The eastern half of the Indian plain, in the basin of the Ganges, may be compared to its miniature representative, the plain of Lombardy in Southern Europe, for the broad alluvial lowland of the Ganges is at once the most fertile, the most cultivated, and most densely peopled region of India. The delta mouths of the Ganges, however, like those of the Po, have their unhealthy swamps, the muddy mangrove-covered "*Sundarbans*."

Lastly, on the eastern side of the continent, we come to the wide alluvial plain of China, extending from the great wall on the north down to the lower Yang-tse river, every corner of which is irrigated and cultivated to support the enormous population of nearly two hundred millions of human beings that crowd its surface.

4. Highlands.—The great mass of the Asiatic highlands extends through the whole continent, from the Mediterranean on the south-west round to Bering Strait on the north-east. Midway nearly, the plains of north-western India and of Southern Turkistan approaching one another, the highland is compressed to its narrowest, so that two unequal portions of it, an eastern and a western, are only united by the isthmus-like range of the *Hindu-Kush*, from the opposite sides of which tributaries flow to the Indus and to the Oxus.

The mass which rises east of the Hindu-Kush is by far the grander. Its southern border is marked by the giant walls of the *Himalaya*, which reach higher above the sea-level than any other mountains on the globe, and have the highest peak of all, Mount Everest, 29,002 feet. South-eastward it runs out into the fan-like ranges which form Farther India; eastward it gives off the *Nan-ling* and *Pe-ling* mountains of China; north-eastward its edge is defined by the *Kinshan Mountains*, and, continuing their direction, the *Yablonoi* and *Stanovoi* mountains extend away to Bering Strait. Towards the Siberian lowlands its limits are formed by the mountains which enclose Lake Baikal, by the *Sayan Mountains*, the *Altai*, and the *Tarbagatai* and *Alatau* ranges farther west; and at the head of the Oxus the circuit is completed by the great plateau land of the *Pamir Steppe*, called by its inhabitants "*Bam-i-dunia*," the roof of the world. Within the limits of this huge division of the Asiatic highland three regions are broadly distinguished. There are (1) the great *table-land of Tibet*, at an average elevation of about 13,000 feet, marked out between the Himalaya ranges, which support it on the south, and the Karakoram and Kuenlun, which form a similar if not so elevated buttress to the plateau, on its northern or inner side. (2) The *basin of the Tarim river* in Eastern Turkistan, and the central *Gobi region* of Mongolia, at an average height of 3000 to 4000 feet above the sea. The western part of this second region is very clearly defined in Eastern Turkistan, where the Kuenlun on the south, and the Thian Shan or Celestial Mountains descending into it on the north, are united by the Pamir plateau on the west, to form a great bay of mountains round Kashgar and Yarkand. (3) The third region embraces the series of higher plateaus which rise towards the northern side of the mass.

between the inner slope of the Thian Shan, and the outer one of the Altai and other ranges which stand along the Siberian border of the highland.

5. The division of the highland which rises west of the Hindu-Kush isthmus opens out first into the broad *plateau lands of Afghanistan and Persia*, the outer edges of which also are very clearly defined. On the northern side the ranges continuing the Hindu-Kush along the south of the Turkoman desert run west to join the *Elburz range* (Mount Demavend, 18,464 ft.), which falls abruptly to the southern coast of the Caspian. Towards the Indian plain the *Sulaiman range* forms the edge of the plateau, and towards the Indian Ocean, the Persian Gulf, and the plain of Mesopotamia, the parallel chains of South Western Persia, the *Kohrud*, the *Mountains of Fars and of Kurdistan*,¹ give a distinct and well-marked limit. Where the northern and southern border ranges of the Persian highland approach one another west of the Southern Caspian, they form the *mountain land of Armenia*, with Ararat (16,916 ft.) for its central point. Farther west the highland again opens out in the broad plateau of Asia Minor, which has the *Taurus ranges* for its southern buttress. From the heights of Western Kurdistan also a line of height runs southward along the coasts of Syria to form the *Lebanon*; and the continuations of its double chain are the *plateaus of Judæa and of Moab* east and west of the remarkable fissure of the Jordan and the Dead Sea, the deepest hollow of the earth's surface.

6. Besides the main mass of the Asiatic highland in its two great divisions above sketched, several isolated highlands are noticed. One of these nearly fills the desert land of Arabia, rising at once from the Red Sea coasts and descending gradually towards the Mesopotamian plain. The highest part of this plateau is in that part of its edge which faces the Gulf of Oman, where the summit of *Jebel Akhdar*, the "green mountain," is not far short of 10,000 feet in height. Another isolated highland is that of the *Deccan* in Southern India, marked out between the Western and Eastern Ghats or "passes," by which it is ascended from the Arabian sea-coast, or from that of the Bay of Bengal; and by the *Vindhya Mountains* along its northern edge, facing the plain of the Ganges. A third important detached mass is that of the *Sikhota Alin* or Tatar Mountains, and their southern prolongation, the *Shan Alin*, and the high mountains which give its form to the peninsula of the Corea. The valleys of the Amur and of the Liao-ho separate this mountain region almost completely from the main mass of the Asiatic heights.

7. Lastly, we have to notice the chain of volcanic heights which forms so many remarkable loops along the eastern or Pacific front of the continent from Kamtchatka (Klyutchev vol., 15,760 ft.); through the Kurile Islands to Japan (Fusi Yama vol., 14,180 ft.); thence through the Liu-Kiu Islands to Formosa (Mount Morrison, 10,800 ft.); and from that through the Philippines to Borneo (Kini-Balu, 13,698 feet), Sumatra, and Java, which last has a greater number of volcanic cones than are to be found on any land of similar extent on the earth.

8. To obtain a general idea of the character of the great highland mass of Central Asia, we may suppose ourselves to be travelling from the plains of India northward to those of Siberia. From the cultivated plain of the Ganges we should reach first the dreaded forest belt of the "Terai" along the base of the mountains. Having passed its swamps, leaving the tropical vegetation of the lower slopes of the Himalaya, we should find ourselves, at a height of 4000 or 5000 feet, in forests of oaks, walnuts, and chestnuts, like those of Southern Europe. Higher up the face of the Himalaya, from 8000 to 10,000 feet, this forest is replaced by rhododendrons, and above the latter

¹ Sometimes collectively called by the old Greek name of *Zagros*.

height to 12,000 feet by pine trees. Above 15,000 feet vegetation becomes scanty, though plants have been gathered up to 19,000 feet above the sea. Then follows the snowy region, which gives its name the "abode of snow"¹ to this highest range in the world, and which sends down great glaciers, in comparison with which those of the Alps are insignificant. The passes, always difficult, lead through the snowy zone, the lowest of them being as high as the most elevated of the Alpine passes of Europe. Having crossed the crest of the snowy range, we would enter the bare region of Tibet, the highest plateau land of the world, where the herdsman tends his flocks of long-haired shawl-wool goats, his sheep and Yak oxen, and where grain can only be cultivated in the deeper valleys. This is also the country of the wild horse and of the great wild sheep or Argali. Descending the northern edge of the Kuenlun from the Tibetan plateau into the central basin of the Tarim, we should reach the Takla Makan desert, which is a continuation of the sandy Gobi, with bordering steppe land next the bases of the mountains on each side. Ascending the opposite range of the Thian Shan, and entering Zungaria, we should find ourselves again in a more favoured Alpine region, with cultivable valleys and woods reaching up to the snow limit, and grassy Alps to which the Kirghiz resort for summer pastures. Lastly, descending to the lowland, we should enter the pine forests of the Siberian plain.

9. Hydrography.—The rivers of Asia flow outward from the edges of the great highlands of the interior to the Indian Ocean, the Pacific, and the Arctic Seas ; but within the borders of the great plateaus, and in the dry regions of the steppes and deserts, there is an immense area from which no rivers escape to the ocean.

The greatest rivers are those which flow northward over the Siberian lowlands to the Arctic Sea. The *Ob*, 2700 miles in length, richest in fish of all the rivers of Siberia, affords a great summer thoroughfare for all western Siberia through its main channel and that of its tributary the Irtysh. The latter gathers its head streams in the Zaisan Lake, 80 square miles in area, and 1500 feet above the sea, in a valley of the Altai. Its channel is twice flooded, first when the snows of the plains melt in May, and again in July when the mountains in the south send down their supplies, inundating the land ; the plain then presents the appearance of a waste of waters, broken only by the tree-tops which rise above its surface. At its mouth it freezes in October, and the ice does not break up till May.

The *Yenisei* is a still larger river, ranked, by Russian geographers, after the Mississippi. Its head waters, or rather those of its main branch the Angara, collect in the great *Lake Baikal*,² 1280 feet above the sea, which is the greatest fresh lake in Asia, 300 miles in length (London to Edinburgh), regularly traversed in summer by steamboats, and from November till April by sledges over its ice covering. The Selenga, the main feeder of the Baikal, has an upper reservoir in the *Kos-gol*, in the mountains south-west of Irkutsk, also a great expanse, 70 miles long and 25 wide. Till quite recently the traffic on the Yenisei by summer steamer and winter sledge was confined to Siberian interchange alone, but now the practicability of the navigation of the Kara Sea from western Europe has been demonstrated, and this part of the north-east passage will, doubtless, be the line of an immense summer trade in future, to bring the abundant furs, flax, wheat, and hemp more speedily to market.

The *Lena*, rising in the mountains near Lake Baikal, is the great artery of trade and communication in eastern Siberia ; it begins to be a navigable river

¹ Sanskrit, *Him*, snow, *dhaya*, place.

² Turkish, *Bet-kul* = Rich lake.

at no great distance from its source, and between Kirensk, its point of communication with Irkutsk, and Yakutsk at its great knee lower down, a considerable traffic is maintained. At Yakutsk it is frozen over for more than 200 days in the year (October to May).

10. Coming round to the Pacific slope, the first great river we meet with is the *Amur*, which the Tatars call "Karamuren," and the Manchus "Sakhalin-ula," both meaning "Black river," from its dark-brown colour, and the Chinese, "Che-lung-kiang," or river of the black dragon. Formed by the confluence of the *Shilka* and *Argun* at the northern extremity of the Kinghan range, and joined below by the *Sungari* from Manchuria, the Amur is a great river, destined to be of the utmost importance as the highway of Russian trade in eastern Siberia. It is navigable by steamers up to Chita on the Ingoda, a tributary of the Shilka, a distance of nearly 2500 miles by river.

The two great rivers of China, the Hoang-ho, or "Yellow river," and the Yang-tse-Kiang, the "son of the ocean," have their head streams near one another in the mountains of eastern Tibet, and after widely divergent courses tend to meet again near their mouths. The *Hoang-ho*, "the trouble of the sons of Hona," is a wayward and turbulent river, which has changed its lower course over the level plain of China no less than nine times within the period of historical record. Its last change, accompanied by great calamities through the bursting of its embankments and the burying of entire villages in mud, took place from 1851 to 1853, when it broke through its northern banks and took a course to the Gulf of Pe-chi-li, in place of its old channel which reached the Yellow Sea about 600 miles north of the mouth of the Yang-tse. It is little used for navigation, Chinese vessels being unable to stem its current, and in its present condition it is unserviceable for steam traffic.

The *Yang-tse*, on the other hand, is the great commercial highway of China. It emerges from the grand mountain gorges of Tibet at a distance of about 1300 miles from its source, there making its way through narrow clefts with precipitous walls of rock, so narrow in some places that boats passing up or down keep to their own side of the stream to avoid collision. The Tsi-tan rapid at the mouth of the Metan gorge,¹ about 1200 miles from its mouth, marks the limit of its navigation for larger vessels; but the Chinese traders ascend it for fully 1000 miles farther, tracking or towing the boats up the perilous rapids by the united efforts of from fifty to two hundred men, who earn their living partly in this way, partly by pillaging the many wrecks that occur. The vast size and importance of the lower river may be estimated when it is remembered that ocean steamers, those which bring the freight of tea to England, can easily ascend to Hankow, 700 miles from the sea, to take in cargo there.

The *Song-ka*, the river of Tong-king, which rises in the Chinese province of Yun-nan, has recently been explored by French travellers with a view to its utilisation as a highway of trade.

11. Still farther south, approaching the slope to the Indian Ocean, we come upon the *Me-Khong*, or Cambodia, the greatest river of Farther India, which also has its sources in the mountains of Yun-nan, and which thence flows south for 1700 miles through Siam and Cambodia to form its great delta of Lower Cochin-China, now held by the French. In 1866-68 a French expedition explored a large part of this great river, which in many places is narrowed by rocks and by sandbanks to such an extent as to make it improbable that it will ever become a great highway of trade.

The *Menam*, or "mother of waters," the central river of Siam, the river of the busy port of Bangkok, like another Nile, fertilises its banks by its annual overflow.

¹ In 31° N.

Coming round the Malay peninsula to the Indian Ocean, we first reach the *Salween*, a fine river, the mouth and lower course of which are included in British Burmah, and its neighbour river the *Irawadi*. Both of these have their head waters also in the mountains of Yun-nan: the former is navigable for 400 miles above its seaport of Maulmain to where it breaks by rapids through a mountain gorge: the latter can be ascended without difficulty for nearly 600 miles to a defile through which it passes above the town of Bamo.

Next we come to the twin rivers *Brahmaputra* and *Ganges*, with their huge delta at the head of the Gulf of Bengal. For a long time it was not known which of the rivers of south-eastern Asia received the waters of the *Sanpo*, the great river of the Tibetan plateau which flows eastward behind the ranges of the Himalaya, and on which vessels of considerable size pass and repass, at an elevation of 13,000 feet above the sea: there is now, however, little doubt that the *Sanpo* is the upper course of the *Brahmaputra*, and that it breaks through the Himalayan chain, turning south in about 95° E., where it has the name *Dibong*. Reaching the lowland of Assam it reverses its earlier direction, turning west and south-west to join its waters to those of the *Ganges* on the east of the delta. Though rapid, the lower *Brahmaputra* is navigable throughout Assam to where it takes the name of the *Dibong* in issuing from the mountains. The *Ganges* (Gangā), the sacred river of the Hindus, rises in a snow-field of the southern face of the Himalaya, at an elevation of nearly 14,000 feet above the sea, rushing down as a torrent to the highest accessible point on its banks (10,300 feet), where the temple of Gangotri is built. To the Hindu a bath or a drink of the sacred water at this point has wonderful atoning virtues, and those who cannot themselves make the pilgrimage hither are supplied with flasks of the holy element bottled by the priests of Gangotri. At Hardwar, 1050 miles from the delta, the *Ganges* leaves the mountains, and entering the great plain becomes at once a navigable river. At Allahabad the *Jumna*, which has followed a parallel course from the mountains, adds its strength, thence by Benares and Patna, it passes eastward to weave its many mouths with those of the *Brahmaputra*, and to wage a battle twice daily with the inflowing tide among the malarious islands of the Sundarbans. One of the westerly delta branches, the *Hugli*, on which Calcutta stands, is the most frequented highway to the sea.

The *Indus*, the great western river of India, has its source like the *Brahmaputra* high up in the dreary tableland of Tibet, and not far from the sacred *Mansarawar Lakes*, which lie between the heads of these two rivers at an elevation of 14,500 feet above the sea. Its course between the Himalaya and the Karakoram ranges is first north-west; like the *Brahmaputra* it then turns south to find its way by deep gorges to the Indian plain. At Attock, where it is still 1000 feet above sea-level, and 950 miles from the sea, it receives the *Kabul river*, of nearly equal volume, and this is the limit point of its navigation, though it cannot be ascended during the floods from May till September. Midway from Attock to the sea it is joined on the left by the *Panjnad*, which brings to it the united waters of the *Jelum*, *Chinab*, *Ravi*, *Bias*, and *Satiej*, which make up the "five rivers" of north-western India that give its name to the country of the Panjab.¹

From its shifting channels and sandbanks, and the arid nature of the country through which it flows, the *Indus* is of less value as a highway of traffic than most other rivers of equal magnitude; and in winter or the season of low water only one of its numerous delta outlets is available for passage to the sea; yet the *Indus Steam Flotilla Company* keeps up regular communications between Kotri above the Delta and Multan in the Panjab.

¹ Persian, *panj*, five, *ab*, water or river.

The great rivers which embrace Mesopotamia, the *Euphrates*, and its twin brother the *Tigris*, are perhaps destined to play an important part in history again, as parts of a great highway to India; the former, from its source near Mount Ararat in Armenia, flows first westward like the Indus through the mountain ranges, to turn south into the lowland, after having approached to within 100 miles of the Mediterranean. It is significant that just at this point (at Bir, 1150 miles from the sea) the river becomes navigable for light draught steamers and leads thence in a direct line to the head of the Persian Gulf. The *Tigris*, the "arrowy," springing within the great bend of the upper Euphrates, is a more rapid river, bringing down great quantities of mud; joining the Euphrates about 120 miles from the head of the Gulf, it forms with it the deep tidal channel called the *Shat el Arab*, navigable for ships of 500 tons. At present these great highways stand almost idle.

12. If we turn now to look at the interior or *continental drainage* area of Asia, the space from which no rivers escape to the sea, we find that it embraces both the wide dry region of the lowland which surrounds the Caspian and the sea of Aral, and the interior plateaus of both great divisions of the Asiatic highlands, Tibet, Turkistan, and Mongolia in the east, and Persia and Arabia west of the isthmus of the Hindu-Kush. To the lowland region belong the great residual lakes of a former Mediterranean, the Caspian, which we have already noticed in connection with Europe, the Aral, and Lake Balkash, with many smaller salt-pools.

The *Aral*, the "sea of islands" (25,870 square miles), is a wider and larger expanse than the Irish Sea, and we may compare a voyage across it in one of the Russian steamers which now navigate it to one from Liverpool to Dublin. But it is much shallower, and the gigantic reeds, 20 feet high, which surround its shores are ever gaining upon its receding and brackish waters, and forming new islands. Though it lies in the same latitude as southern France, it has ice a foot thick over it in winter. Unlike the Caspian, its level is 157 feet above that of the ocean. The rapid evaporation from its surface is compensated by its feeders, the *Syr Daria* (or Jaxartes), and the *Amu Daria* (Oxus) from the Thian Shan and the Pamir edges of the great central highland.

Both of these rivers, the largest of those in the continental drainage system of Asia, are now navigated by small Russian steamers, though both have a rapid flow.

The curving *Balkash Lake*, 310 miles long, receiving seven streams from the Ala Tau mountains which rise south of it, the chief of these being the *Il*, is a still shallower expanse, the greatest depth found in it by the Russian explorers being only 70 feet, and its waters are bitterly salt. Though in the same latitude as the Aral, it has a more continental position, and it is also much higher above sea-level, 780 feet, so that it is frozen over from November till April. South of it, filling a high mountain valley of the Thian Shan and Alatau ranges, at a height of about 5000 feet above the sea, lies a remarkable expanse of brackish water called the *Issyk-Kul* or "warm lake," 120 miles long from east to west, and more than ten times larger than the lake of Geneva. It is very deep, and, perhaps mainly on that account, never freezes; it has, besides, another peculiarity, that of overflowing occasionally to the *Chui* river, one of the many which terminate in the smaller salt-lakes of the lowland of *Turkistan*.

Within the continental drainage of the *highland* of Asia the most important river is the *Tarim*, which gathers its waters from the sides of the crescent of mountains that encircles Kashgar and Yarkand in high Eastern Turkistan. Many of its head streams are employed in irrigating the cultivated land round these cities, but the remainder escapes away eastward into the desert to keep up the supply of *Lake Lob*, a great marshy expanse at a level of about 2200 feet above the sea, which was re-discovered by a Russian explorer in January 1877.

13. On each side of the vast central desert, the mountains of Tibet and of north-western Mongolia form many isolated basins, each with its central lake fed by the mountain streams. One of the largest of these, not far from the sources of the Hoang-Ho and Yangtze, is the *Koko-nor* or "blue lake," 10,500 feet above the ocean, and about 200 miles in circumference. The *Tengri-Nor*, called the Namcho or "sky lake," in the vicinity of Lassa, is another of these large isolated basins.

14. Almost the only river of importance in the western highland region of interior drainage is the *Halmand*, which flows south-westward from the Hindu-Kush with varying volume, to fill the pools of the great expanse called the *Hamun Swamp* or Seistan Lake on the borders of eastern Persia. At ordinary seasons the Hamun, which reaches through a length of 70 miles, is for the most part dry and grass-covered, its edges being marked only by reed beds and clay cliffs. Lakes *Urumiah* and *Van* in the mountain region between Armenia and Kurdistan, west of the southern Caspian, are the largest lakes of the western division of the highland. The former, 85 miles long (Portsmouth to Cherbourg), has water of such intense salinity that no fish can live in it, and it lies at 4000 feet above the sea; the latter, Lake Van, 5120 feet in elevation, is of somewhat smaller dimensions, and is but slightly brackish. Saltiest of all salt-lakes, perhaps, is that known as the *Tuz Göl*, "salt-lake," the centre of the interior drainage of the plateau of Asia Minor, 60 miles long; no fish can live in it; birds avoid it, for their wings if they bathe in it become covered with a stiff salt crust.

15. **Climate.**—Like Europe, Asia belongs for the most part to the temperate zone; only the southern promontories and islands reach into the tropical belt; only the broad northern border of the Siberian lowland extends into the Arctic region.

This position of the continent in latitude, together with the effect of its great highland barrier reaching across it from south-west to north-east, exposing all its northern slope to cold atmospheric currents from the polar region, and shutting it off from the warm winds of the south, brings about a broad triple division in its climates—

- (1) That of Siberia from the icy sea to the base of the mountains;
- (2) That of the Asiatic highlands;
- (3) That of India and the southern promontories.

Besides their contrast in temperature, these three divisions of the continent are even more strongly distinguished in their supply of moisture. During summer, or while the vast area of the continent is beneath the more direct influence of the sun approaching the northern tropic, the winds are drawn towards the heated lands

from all sides. Thus the peninsular region south-east of the mountain belt combines heat with an abundant rain supply, brought to it by the "*monsoon*" or seasonal wind from the Indian Ocean (S.W.), and from the Pacific (S.E.); so that Hindustan, Farther India, Southern China, and the islands which lie beyond, are characterised by luxuriant plant life. During summer, also, the winds are drawn in from the thawing Arctic Ocean on the north, from the Atlantic on the west, and the Pacific on the east, to the northern slopes of the continent, and bring the moisture supply which supports the vast forests of Siberia. The outer edges and slopes of the central mountain region thus intercept the rainfall which maintains the great rivers which flow from them north, east, and south, to the sea; but the plateau lands between these encircling heights are screened by them from the rain-bearing winds, and are consequently dry and bare.

Thus it is that all the inner plateaus of Asia, the vast region of Mongolia, of Eastern Turkistan, and Tibet, of Persia and Asia Minor on the west, present landscapes of bare steppes and sandy deserts, with their accompanying dry atmosphere, cloudless blue skies, and falling and treacherous periodical streams that end in salt-lakes or evaporate in the sands. Hence also their inhabitants, compelled to seek fresh pastures and watering-places with almost every change of season, appear as restless nomads: hence also their inclination, so frequently illustrated in the history of the continent, to quit their barren steppes at times, and sweep like a devastating flight of locusts over the settled nations of the south and west.

16. One very prominent feature of the climate of Asia, which depends on the vast extent of the continent, one which is more pronounced here than in any other part of the world, just in proportion as the extent of land is greater, is its *excessive* character. We have already noticed in speaking of the climate of Europe how the extremes of daily and yearly temperature grew wider and wider apart as we left the maritime climate of our islands and advanced eastward towards the Russian steppes. Here in Asia the same divergence continues to increase towards the central regions of the great continent. The Russian army advancing towards Khiva in the campaign of 1839-40 experienced vicissitudes of temperature from a heat of over 100° F., to a cold in which the thermometer sank to 45° below the zero point, and Khiva owed its safety then to the climate of its surrounding deserts. At Yakutsk, in Eastern Siberia, the culminating point of excessive climate in all the world is reached. The temperature there sinks to the lowest known point, many degrees below the average of the polar ocean to northward of it, and the soil is permanently frozen, as was proved by the sinking of a shaft, to a depth of 330 feet. From October on through the winter till April, frost holds sway both day and night, the *average* temperature of January being - 45° F. Two months later, the Lena is free from ice; the surface soil has thawed for three or four feet, and the warmth of the short summer is such that grain will ripen in the shallow stratum of soil above the frozen mass beneath, the mean temperature of July being 69° F., or as high as that of Paris. Here, then, at what may be called the pole of excessive climate, the year is divided into a long winter and a short summer, with rapid change times between. Outward from this towards south and east the extremes decrease, till in India, and all the maritime regions of *the south-east*, the seasons are marked rather as the dry and the wet, accord-

ing to the direction of the monsoon wind, than by changes of temperature, and in the islands of the East Indies, about the equator, the minimum line of annual variation of temperature is reached. At Colombo, in Ceylon, for example, in contrast to Yakutsk, the average temperature of each month of the year remains very nearly the same, in January 80°, in July 81°.

17. Many parts of Southern Asia are unhealthy. Intermittent fevers are so common in the lower parts of India that mountain "sanitaria" have been established for Europeans who can thus enjoy a temperate climate: the "Sundarbans" of the Ganges delta are believed to be the very home of cholera: yellow fever imported from the West Indies has spread, especially in the Moluccas; the plague which, at different periods from the sixth till the seventeenth century, visited western Europe, made its devastating march thither from China. Hence the strictest "quarantine" is maintained all along the many trade routes of the south of the continent from port to port.

18. **Products.**—To Central Asia we owe most of the European grains and tree fruits, oranges and lemons, peaches and apricots, the fig and olive, vines and nut trees, besides hemp and flax, the garden rose, and many other cultivated flowering plants. From India the banana has spread out to all parts of the tropical world, with rice and the sugar cane, indigo and several sorts of cotton; it is also the home of several palms, the coco and the pinang, which gives the areca or betel nut; it has the largest poppy fields yielding opium, giant bamboos, ebony, and teak the most durable of shipbuilding timbers.

China is the native country of the tea plant: the East India islands and the Malay peninsula of spices, cinnamon, black pepper, and cloves, and of the large tree yielding the milky juice that hardens into "gutta percha."

The mountain region of Central Asia is the native land of the horse and the ass, of the ox and buffalo, the sheep and goat, from which the domesticated varieties appear to have derived their origin. Both varieties of the camel, the Arabian and the Bactrian,¹ the single and the double humped, are Asiatic. The Yak ox, with its silky coat of long hair, is to the inhabitants of the highland of Tibet what the reindeer is to the tribes of the Siberian plain in the far north, almost their sole wealth and support. The elephant, of a different species from that of Africa, is a native of the tropical parts of Asia; the lion of Southern Asia is smaller than that of Africa: the tiger² is peculiar to the south-eastern parts of the continent: bears are found in all parts, the white bear in the extreme north, and other formidable species in the more temperate parts, while those of the tropical region are harmless feeders on fruits and honey. Dogs are used by some of the Siberian tribes as sledge-drawers, others are fattened in China for food, but in all Mohammedan Asia the dog is an unclean animal, and prowls about as the scavenger of the towns and villages.

Tropical Asia abounds in monkeys, the largest being the "orang outang," the "wild man of the woods" of Malacca and the south-eastern islands. Some are tailed, others, such as the orang, are tailless, but none have prehensile tails like the American monkeys.

The domestic poultry of all parts of the world seems also to be derived from the numerous gallinaceous birds of Asia; the pheasant takes its name from the Phasis river (the modern Rion flowing to the Black Sea from the Caucasus), from the banks of which it was brought at an early period into Greece; the splendid peacock is a native of the East Indies, as the exquisite birds of paradise are of the south-eastern islands.

¹ Bactria = modern Balkh.

² In India, according to official returns, from 15,000 to 20,000 people are lost by snake-bites, or are the prey of wild animals, chiefly tigers, or of the crocodiles and gavials of the rivers, every year.

Siberia, the flora and fauna of which are almost limited to its fine woods and fur-bearing animals, makes up for this deficiency by its mineral treasures ; it is the great mining region of Asia, yielding gold, silver, and platinum, copper and lead, coal, and graphite better known as black lead ; India has diamonds and other precious stones ; China its fine porcelain clay or kaolin, besides vast coal-fields ; the Steppes round the Caspian region are rich in salt ; the steamers of the Caspian, in place of coal, now make use of the abundant naphtha or petroleum from the "fire fields" of Baku, to which Gueber fire-worshippers of Persia formerly made pilgrimages ; the Dead Sea also occasionally casts up large masses of asphaltum or bitumen, whence its ancient name of *Lacus Asphaltites*.

19. Peoples.—In contrast to Europe, the greater part of which is occupied by one race, Asia is peopled by races belonging to four ethnographic groups—the *Aryan*¹ and the *Semitic* in the south-west, the *Malay* in the south-east, and the *Tataric* or *Mongolian* occupying all the rest of the Continent, and far exceeding the others both in area and in numbers.

The Mongolian peoples may be divided into five branches—

(1.) The *Eastern Mongolians*, including the cultivated Japanese and Chinese and Coreans, and the less advanced peoples of Farther India (the Indo-Chinese, Siamese, Burmese, Aracanese, Cambodians, Laos, etc.)

(2.) The *Southern Mongolians* or Tibetans.

(3.) The *Central Mongolians*, including the Mongolians proper of Mongolia, the Kalmucks of the Altai, the Buryates about Lake Baikal, and the great branch of the Tunguses, who occupy Manchuria (Manchus), the Amur basin and borders of the Sea of Okhotsk, and who also reach away north to the Arctic Sea between the Yenisei and the Lena.

(4.) The *Western Mongolians* or *Tatars*, including the Tatars and Kirghiz of south-west Siberia, the Turkmen on the eastern side of the Caspian the Turks of eastern and western Turkistan, and the isolated Yakuts of the Lena basin, who wandered to that northern region at some unknown period.

(5.) The *Northern Mongolians*, embracing all the peoples of northern Siberia (excepting the Tunguses and Yakuts) from the Samoyeds and Ostyaks in the west, next the Ural, to the Yukahires, Chukchis, Koryaks, and Kamtchadales of the eastern promontory. The position of the Ainos of Yezo, the Kurile Isles, and Saghalien has not yet been satisfactorily determined.

20. It is generally believed that in very early times the great southern promontory of India was inhabited by tribes belonging to the same stock as the people of Central Asia, the Mongolians. At an epoch which cannot be accurately determined, but which is supposed to have been about 1600 years B.C., a colony of the Aryan or Indo-European race, fair-complexioned people from the high plateau on the north-west, descended into the great plain of Northern India, and establishing themselves there by physical force and higher culture, spread out and diffused themselves as the dominant race over all the low country northward of the Vindhyan Mountains. Thus was formed the nation we know as the Hindus (the dwellers by the Indus river), who are still the most cultivated of the Asiatic Aryans. Their influence extended feebly into the highland of Southern India ; hence the majority of the inhabitants of the Deccan plateau remain distinct in their short and dark outward form from the taller and fairer Hindus, and in their languages, called the Dravidian group, which have a relationship to those

¹ Or Indo-European.

of the Tatars of Central Asia. Within these broad lines, the peoples of India of the present day differ quite as much among themselves in appearance as do the nations of Europe.

Besides the Hindus, there belong to the Aryan peoples of Asia, the Tajiks¹ of Persia, the Afghans, Baluchis, and Kurds of the Iranian highlands; the Armenians of the mountain region farther west which culminates in Ararat, one of the oldest civilised peoples in the world; and the Ossetes in the Caucasus. The Georgians or Grusians of the broad valley between the Armenian mountains and the Caucasus; and the tribes of that mountain range, the Cherkesses or Circassians,² Mingrelians, Lesghians, etc., form a distinct family, supposed to represent the Iberians.

In later times a stream of the Slavonic branch of the Indo-European race has flowed eastward across Southern Siberia to beyond Lake Baikal, and down the banks of the great rivers of the northern lowland of Asia, as the dominant power; almost the whole of India also has passed under the control of our section of the Germanic branch of the Aryan race (the British), who, however, are in numbers only as one to three thousand of the native population.

21. To the *Semitic race* in Asia belong the greater part of the inhabitants of Syria and Arabia, and most of those of the Mesopotamian plain; all round the borders of these regions the Semitic peoples are under the government of the dominant Turks; in the interior of Arabia, however, the Wahabi and others maintain their independence, and the Bedwins of the Syrian deserts owe no allegiance to any foreign race.

22. The *Malays* of the south-eastern tropical peninsula and islands are a brown-complexioned race, with long coarse black and shining hair, a large mouth and short flat nose, with slight and well-formed limbs, but generally below the English middle height. Divided into many tribes, they appear in some parts as peaceable agriculturists, under their own chiefs or under foreign masters, in others as shy savages, again as fishermen or traders, or as dreaded pirates of the narrow seas. Their relations, the *Bataks* of the smaller islands (including the Bugis of Celebes), are somewhat larger in build and stronger in frame than the Malays proper.

In the interior of many of the islands of the Eastern Archipelago there live still, as remnants probably of an aboriginal race which once held the whole region, certain negro-like tribes, to whom the Spaniards gave the name *negritos* (the diminutive of negro), from their resemblance to the negroes of African Guinea in the projection of the under part of the face, their woolly hair, broad nostrils, and very dark complexion, and from their short stature. In Western "New Guinea" these aborigines probably received their name *Papuas* from the Malay word "Papoeawah," which signifies curly or woolly.

23. **Religion.**—Asia, as we have seen, has given the rest of the world most of its domesticated animals and cultivated plants; it has also been the centre in which the germs of religion and learning have been fostered, and whence these have spread outward.

The three monotheistic religions which have taken the widest hold on the minds of men (Jewish, Christian, Mohammedan) arose among the Semitic peoples of south-western Asia; the purest of these has become the religion of enlightened Europe, but in its native country it has been overshadowed by *Mohammedanism*, which prevails in all south-western Asia, in Asiatic Turkey

¹ *Tajiks* = peasants, in contradistinction to the *Turks*, or warriors.

² On the subjugation of the Caucasus region by the Russians in 1864, nearly half a million of Circassians, or inhabitants of the north-western wing of the range, made a simultaneous exodus to place themselves under Turkish rule in European Turkey.

and Arabia, in Persia and Turkistan, and which has penetrated deeply into Hindustan¹ and among the Malays of the East Indies. Christianity appears only here and there in islets, as among the Armenians and Georgians. The fundamental article in the creed of the Mohammedan is—"There is no God but God : and Mohammed is his prophet." He believes in an immutable fixed destiny (fate), in eternal punishment for idolaters and unbelievers, and a voluptuous paradise for the faithful ; and frequent ablutions, prayer five times a day, a pilgrimage to the shrine of the prophet, fasts, abstention from wine and the flesh of swine, and the giving of alms, are obligatory duties. The Mohammedan's bible is the *Koran* : his weekly day of rest is Friday. Mohammedan temples or *mosques*² are roofed with rounded cupolas and adorned with slender *minaret* towers, from the galleries of which the call to prayer is given. The priests are called *Imam*, the saints are *Marabuts*, the monks are *Dervishes* or *Fakirs*. Two main sects divide the Mohammedans—the *Sunnite* sect, to which the Turks and Tatars chiefly belong, recognises the *Sunna*, a collection of traditional doctrines and laws supplementary to the *Koran* ; the *Shiahs* or *sectarians* (as they are called by the *Sunnites*) of Persia, are followers of Ali, the son-in-law of Mohammed, who is endowed by some of them with more than human attributes. The *Wahabis*, a more recent sect, now dominant throughout the greater part of Central Arabia, may be considered as puritanical reformers, who seek to purge away the innovations that have been introduced into Islam in the course of time, and to return to the literal precepts of the *Koran*.

24. The religion founded by Zoroaster of Bactria (the doctrine of the "Magi" of the ancient world), with its scriptures called the *Zend-avesta*, is interesting from its antiquity ; originally a pure monotheism, it passed afterwards into a belief in a conflict between the powers of good and evil, light and darkness, (Dualism), the former of which will, it is believed, ultimately triumph. Thus the symbol of light, the sun and fire, are venerated, and towards these the believer is enjoined to turn during his devotions. Purity of thought, word, and deed sum up the ethical code. Previous to its conquest by the Mohammedans, the religion of Zoroaster prevailed over Persia, but about that date the greater part of the inhabitants of that region became converts to Islam, others clung to the old faith, and, subjected to persecution, fled to the wilderness and to the island of Ormuz. Their descendants are known as the *Guebres* (Turkish *Ghiaour*), who are scattered here and there over Persia at the present day. A branch of them after many migrations found shelter in India in the sixteenth century, and as the *Parsees* (people of Pars or Fars, or ancient Persia), now form about 20 per cent of the population of the neighbourhood of Bombay.

25. In Hindustan, so far as Mohammedanism has not taken its place, the *Brahminic religion* (in several sects) prevails, and from it, based on the same philosophy, arose the religion of Buddha, which spread over Farther India, Tibet, China, and Japan, and which has far more numerous adherents than any other faith in the world.

The Brahminical religion, a corrupted monotheism, has three principal gods, Brahma the creator of the universe, Siva the destroyer, and Vishnu the preserver. Its scriptures are the *Vedas*, probably the oldest literary documents in existence. The soul is believed to be identical in nature with the spirit whence it proceeds, and only the purified soul of the believer who understands its true nature returns to eternal bliss ; the impure soul wanders or transmigrates through animals and men again, till its purification is complete. Good works, prayer, and fastings, and even self-tortures, are supposed to be necessary acts of a pious life.

¹ 21 per cent of the inhabitants of British India are Mohammedans.

² *Mesjid*, a place of prayer.

Four chief *castes* or classes of Hindu society, with many subdivisions, are distinguished and are kept apart by petty laws and penalties. These are—

(1.) The *Brahmans*, or sacerdotal class, who are said to have issued from the mouth of Brahma at the moment of creation, and are treated with profound respect.

(2.) The *Kshatriya* or military class, to which the rulers for the most part belong.

(3.) The *Vaisya* or mercantile class; men of business, traders, farmers.

(4.) The *Sudras* or servile class, subject to the three foregoing, never to improve or to reach the dignity of the higher castes.

Beneath all come the *Pariahs*, the lowest class of the population in India, outcasts, degraded and miserable.

The Hindu temples or pagodas are great pyramidal buildings of hewn stones of colossal dimensions, covered with the richest ornamentation, and with very numerous figures of deities. To these are attached a class of Bayaderes¹ or dancing-girls (Devadasis), whose duty is to sing the praises of their special god at festivals, and dance before him.

26. About the sixth century before Christ, Buddha a prince of a kingdom which lay on the borders of Oude and Nepal in northern India, after six years of rigorous asceticism, began to preach his new gospel throughout northern India, and continued his mission for forty years. In about 300 B.C. the faith was carried by zealous missionaries over all parts of eastern Asia, and to Ceylon, where it has since flourished. About 65 A.D. it was acknowledged by the Chinese Emperor as a third religion, and from the fourth century A.D. onward during six centuries a stream of Buddhist pilgrims continued to flow from China to India. The main element in the success of Buddhism, perhaps, was the spirit of charity which it breathed in contrast to the exclusiveness of caste, all the followers of Buddha being released from its restrictions. The adoration of the statues of the contemplating Buddha, the central object in the temples, is the chief external ceremony of this religion; but Buddha is not a god, only the ideal of what man may become. There are no priests properly so called, the *Sramanas*, ascetics or mendicants, being a religious order who have entered on a course of greater austerity than other men, to the more speedy attainment of the state of *Nirvana*, or complete abstraction.

In Tibet Buddhism has taken a somewhat different form, known as *Lamaism*, which has much in common with Roman Catholicism in its observances, processions, rosaries, and patron saints. The Lama hierarchy has two popes, the one the Dalai Lama, resident near L'assa, the other the Tesho or Bogdo Lama, resident at Shigatze. Next in rank are the *Kutuktus*, who may be called cardinals and archbishops, the third degree being that of the *Kubilghans* or priests, who are exceedingly numerous.

27. In China, the religion of Buddha, now degenerate from its primitive purity, and overlaid with absurd dogmas and image worship, keeps its place along with the systems of philosophy of *Confucius* and of *Laoutze* (*Taoism*) which appear to have arisen almost contemporaneously with the former. In Japan also Buddhism has been modified by contact with the much older faith in the gods or *Sintuism*,² the hierarchy of which is composed of the *Mikado* or spiritual emperor, who is supposed to be descended from the great sun goddess, and who as such unites in his person all the attributes of the deity, besides ecclesiastical judges, monks, and priests. The Sintu temples are usually built on an eminence surrounded by groves, and have no idols; but a mirror is placed on the altar as an emblem of the purity required of the adherents of Sintoism.

¹ From Portuguese *Bailadeira*.

² *Sin* "the god," and "sya" faith.

28. The tribes of Siberia and Central Mongolia, and the Kirghiz of the steppes, remain in complete heathendom. The *Shamanism* professed by some of them is a belief in sorcery and the propitiation of evil demons by sacrifices and frantic gestures; its priests are self-appointed men or women, and when officiating wear a long robe of elk skin hung with brass or iron bells, performing the sacrifices of animals in a hut raised on an open space of the forest, or on a hill.

29. Unlike the fertile peninsulas of Europe on the west, and the promontories of the south and east of Asia, all the central mass of the continent from Arabia over the Caspian region northward into Siberia and eastward to Mongolia, is a region characterised by pastoral steppe and bare desert. Hence the nomadic character of so large a share of the population of these regions. The Bedwin of the Arabian and Syrian deserts wanders from pasture to pasture, carrying with him his black tent of woven goat's hair; the restless Kirghiz roam about the vast monotonous steppes that stretch north and east of the Caspian, as do the Mongols with their camel droves over the steppes north and south of the Gobi desert. In all this region the seats of settled and more cultivated men appear only like islets in a wide sea. In Siberia also, the settlements of Russian colonists, partly deported, partly voluntary exiles, begun in the sixteenth century, are only so many points in the midst of the native tribes, most of whom are nomadic fur trappers in the forests, or fishers, or owners of reindeer herds, which migrate north and south according to the season.

The south and east of the continent presents a remarkable contrast. There China and Japan, India and Indo-China, present densely peopled and highly cultivated lands, studded with great towns and venerable monuments of a civilisation which dates from the most remote times, but which, in contrast to the progressive advancement of Europe, seems to have reached a point beyond which it cannot advance of its own inward vitality, one generation of men following another in the same stereotyped process.

The princes of India rode on elephants and lived in splendid palaces at the time of Alexander the Great's invasion, and the people were then skilled in the same arts they now possess, but all impulse to higher culture and progress beyond that point has come from without, and since the country began to pass under British rule. The Chinese preceded Europeans in many inventions—in printing and paper-making, in the discovery of the compass, in burning coal for fuel, in making porcelain, guns, and gunpowder,—but with these the inventive power seems to have become exhausted, and though foreigners have come and gone teaching new arts and sciences, the Chinese hold tenaciously to the same beaten paths of ancient custom. The Japanese alone have fully awakened, and this only in very recent years, and after several centuries of rigid seclusion from the outer world, to the knowledge of the superiority of western civilisation. As the result of this the most remarkable and sweeping reforms have been made, and the whole spirit of that nation has been rapidly transformed.

30. With the nomadic tribes of Central Asia patriarchal government is associated. In the anciently civilised states of the south and east the ruler is always an absolute monarch or despot. No other form of government than this—except for village or tribal rule—has ever been known on the continent. The ancient Babylonian, Assyrian, and Persian empires, like those of the Arabs, Mongols, and Turks, following them, were all despotisms, the rulers having frequently, as at the present day in China, Japan, and Tibet, the double attributes of religious and political supremacy.

31. Two great progressive European powers, Russia and Britain, now hold sway over more than two-fifths of the vast extent of Asia, and most of the

great political movements that have taken place on the continent during this and the past century have had their origin in the steady and almost continuous enlargement of the authority of these powers. In the densely-peopled promontory of India the British have been consolidating their empire and enlarging their influence south-eastward towards Burmah and inner China, and north-westward to Afghanistan. The Russians in turn have been spreading southward over the Caucasus and over the vast thinly-peopled steppes, incorporating the Khanates of the Oxus and Jaxartes region, and spreading round the eastern side of the Caspian to the borders of Persia. A belt of one to two hundred miles in width still separates the nearest points of approach of British and Russian power in Asia, but the time seems not far distant when the dominions of these two European States in Asia must become conterminous.

RUSSIAN ASIA.

THE CAUCASUS.

1. The division of the Russian Empire named the *Lieutenancy of the Caucasus*,¹ reaching down from the summits of the great natural boundary range northward into the lowland of Russia, and southward over the mountainous region of Georgia and Armenia, lies partly within the geographical limits of Europe, partly in Asia. We may gain an idea of its great extent if we note that it occupies an area nearly as large as the kingdom of Sweden, reaching 800 miles from east to west, and about 500 from north to south.

2. Relief.—The main feature of the region is its great central range, extending in an almost direct line from the peninsula which separates the Black Sea from the Sea of Azov in the west to Cape Apsheron, which projects into the western shores of the Caspian. Like the Pyrenees, but in strong contrast to the Alps, the Caucasus is a single chain, so narrow that the same summits may be seen from the steppes which reach out from its northern base, and from the deep valleys which separate it from the heights of Armenia on the south. It has thus no great valleys in the direction of its length. The spurs descending from the main chain have deep gorges or troughs between. The culminating point is the *Elbruz* peak (18,526 ft.), towards the western end of the chain; the second, *Mount Kasbek*, near the middle of it; both rising grandly from deep valleys. The two most important passes over it were called in ancient times the Caucasian and Albanian gates. The former, now called

	Area in sq. miles.	Population.
1 European Russia	1,884,850	65,990,000
Poland	49,160	6,528,000
Finland	144,230	1,968,600
Caucasus	179,520	5,628,300
Siberia	4,814,610	3,440,400
Central Asia	1,283,470	4,401,900
	8,355,840	87,957,200
Caspian Sea	169,660	—
Sea of Aral	25,870	—
RUSSIAN EMPIRE	8,551,370	87,957,200

the *Dariel Pass*, lies close to the eastern base of the Kasbek, and is a narrow cleft 8215 feet above the sea, available for carriages in the summer. The latter skirts the eastern termination of the range on the shores of the Caspian.

Over the whole chain vegetation is vigorous, but more luxuriant on the warmer southern slopes. The valleys opening in that direction are richly fertile, producing rice and cotton and silk, indigo, tobacco, and vines, and luxuriant woods. The northern slopes, exposed to the keen winds of the steppes, are characterised by bare pasture-lands and scattered fir-woods. At an elevation of about 6700 feet trees disappear, and the snow line is reached at 9000 to 9500 feet on the west, and 12,000 feet in the drier eastern region.

3. *Rivers*.—The two northern rivers descending from the Caucasus are the *Terek*, which turns eastward to the Caspian, and the *Kuban*, which makes its way westward to the Black Sea near the Strait of Kertch. Beyond these, on the low steppes, the *Manish*, a tributary of the Lower Don, forms the greater part of the northern boundary of the territory.

The valleys immediately south of the Caucasus are occupied by the *Kur* (or *Cyrus*), flowing south-east along the mountain base to the Caspian, and by the much smaller *Rion* flowing west to the Black Sea. Beyond these valleys rise the irregular masses of the mountains of Armenia, forming a high basin in which the large lake *Gokcha*, the "blue water" contrasting with the green mountains round it, lies at an elevation of 6340 feet above the sea; and on the southern border of the territory, the frontiers of Russia, Persia, and Asiatic Turkey meet in the majestic dome of *Mount Ararat* (16,920 ft.), covered on its upper three thousand feet with snow and glacier ice. Between Ararat and the heights walling in the Gokcha the *Aras* (or *Araxes*) flows west to join the Kur, near the Caspian, and forms the south-eastern boundary of the territory. Towards the west, since the war of 1877, the Russian boundary of the Caucasus territory has been extended southward to the Choruk river, which reaches the Black Sea south of the port of Batum, so as to include within it also the high volcanic plateau on which the almost impregnable fortress of Kars is built.

4. *Inhabitants*.—The peoples of the Caucasus region differ vastly in language, dress, and customs, and they belong to at least four types of the human family. The Indo-Europeans are represented by Russian and other colonists (26 per cent). To the Iranians (19 per cent) belong the Armenians, Ossetes, Tati, Kurds, and Persians. The "Caucasians" of Russian writers, classed by some ethnologists as Iberians, constitute 31 per cent of the total population, and include the Grusinians or Georgians, the Lesghians, the Chechenzes, and a variety of mountain tribes. Lastly, there are Mongols (25 per cent), represented by Tatars, Turks, and Calmucks. In addition to these, there are Jews, Assyrians, and gypsies.

A long struggle for independence was maintained by these hardy mountaineers against the Russians. The capture of one of their most determined chiefs in 1859 virtually completed the subjugation of the country, but it was not till 1864 that Russian authority could be extended over the whole region; on the completion of the conquest nearly half a million of Cherkesses or Western Caucasians made a simultaneous exodus from the districts adjoining the Black Sea to seek shelter in European Turkey. German colonists, who came hither from Württemberg in 1812-15, and who have settled in various districts, have done much for the improvement of the vineyards. In religion the peoples within the territory are nearly equally divided between Christianity and Mohammedanism. The Greek Church prevails, owing to the large number of Russian colonists, but the Armenians form a powerful minority.

5. *Divisions*.—For administrative purposes the country has been divided into the Government of *Stavropol*, the nearest to European Russia, in the plains, and the territories of the *Kuban*, of the *Terek*, and of *Daghestan*, along

the northern or Ciscaucasian slopes of the range. On the southern or Transcaucasian side the division is into the Governments of *Baku*, next the Caspian; *Elizabetpol* and *Erivan*, between the Kur and Aras; of *Tiflis* south of the central part of the range; and of *Kutais* in the valley of the Rion, sloping to the Black Sea. There are besides on the southern side the military district of *Sukhum*, and the "district of the Black Sea" along the south-western maritime border of the Caucasus, and the newly-added territory, including Kars and Batum, on the south-west.

6. **Chief Towns.**—*Tiflis* (pop. 104,000), on the Kur, immediately south of the Dariel Pass over the Caucasus, a fortified city, formerly the capital of the old kingdom of Georgia, is now the seat of the Russian Governor-General. Here also a Greek and an Armenian bishop reside, and the town is the great emporium of all Transcaucasia, carrying on a large trade with Persia. *Stavropol* or "cross town," on the main route from the Dariel Pass northward into Russia, is the chief place in the Ciscaucasian territory. *Derbend*, meaning the "narrow pass," formerly the capital of Albania, is a busy seaport of the Caspian, named from its position between the mountains and the sea. *Baku*, also on the Caspian, on the south coast of the peninsula of Apsheron, at the point where the great southern route along the base of the Caucasus meets that along the coast of the Caspian, is famous for its petroleum wells, which give it an extensive commerce. *Shemakha* and *Nucha*, on the southern slope of the Eastern Caucasus, are famous for their silk. *Erivan*, "the visible," in Armenia, in the valley of the Aras, north of Ararat, is so named from the tradition that Noah, looking from the mountain, saw this spot dry after the flood. *Alexandrapol*, north-west of it, is a strong fortress, capable of accommodating 10,000 men; and *Kars*, recently gained permanently by the Russians, is a no less formidable fortress, which has been thrice besieged and taken by them (1828, 1855, and 1877). *Poti*, at the terminus of a railway from Tiflis, is the chief port of the Caucasus region on the Black Sea. *Batum*, farther south, added in 1878, is rising in value as a seaport.

SIBERIA.

1. All the immense northern region of Asia, from the Ural Mountains to the Pacific, and from the northern slopes of the great plateau of Central Asia to the low shores of the Arctic Sea, is included in the Russian territory of Siberia. The extreme limits east and west are more than 4000 miles apart; the most southerly point of its frontier, at the Tiumen river which separates it from Corea, and the most northerly, Cape Chelyuskin, which runs out into the icy sea on the north, have a difference of latitude of more than 35°, and it would take nearly fifty-five islands as large as Great Britain to make up an equivalent area to that of Siberia.

2. **Physical Features.**—All Western Siberia, nearest the Ural belt and European Russia, is a vast plain rising almost imperceptibly from the shores of the Arctic Ocean to the Kirghiz steppes and the base of the *Altai* mountains, which spring up from it like a wall, forming the northern buttress of the great tableland of central Asia. The northern border of this plain is occupied by the marshy frozen *tundras*; the broad central belt is covered with *forest*, in the cleared spaces of which the soil is fertile and well suited to agriculture; all the southern portion of it is occupied by treeless *steppes* which reach away south towards the Caspian and Aral Seas.

Eastern Siberia, on the other hand, is more diversified in surface, and there the plain is narrowed by the advancing mountains, to occupy only the border of the Arctic Seas. The *Altai* chain, which reaches a height of 11,000 feet in its summit of *Bielukha*, is prolonged eastward by the Sayan mountains, which separate the Kos-gol lake in Mongolia from the great Baikal in Siberia. Still farther east the *Yablonoi* and *Stanovoi* mountains stretch out towards Bering Strait, and from these moderately elevated ranges irregular tablelands extend northward, filling almost the whole of the north-eastern region, and reaching in several places to the very shores of the Arctic Ocean. In the long peninsula of Kamtchatka, the volcanic belt of Eastern Asia begins, and its surface is dotted over with groups of mountains, which culminate in the volcano of Kliuchev, 15,760 feet above the sea.

3. The four great rivers of Siberia, the Obi, Yenisei, and Lena, entering the Arctic Ocean, and the Amur, winding east to the Pacific, as well as the great Siberian lake Baikal, have already been noticed.¹

4. *Climate*.—Siberian climate is proverbially the most severe of any on the globe. Round Yakutsk, on the Lena, to the north-east, the *average* temperature of the year is about -16° of our Fahrenheit scale, or 48° below the freezing point. Here the range of temperature varies between -58° in the depth of winter, and 99° in the height of summer, but it freezes nearly every night throughout the year, and the soil, which is congealed to a depth of several hundred feet, only thaws at the surface for a time. Along the base of the mountains on the south a less rigorous climate is experienced; there the winter sets in about November, when snow falls, which lies till the succeeding March. At Tomsk, in south-western Siberia, the average temperature of the year is about the freezing point, the extremes being 0° (or 32° below freezing point) in January, and 65° in July.

5. *Products*.—Minerals are the most important products of Siberia. Gold is found in many of the rivers, and though the diggings of the Altai Mountains seem to have been nearly exhausted, the supply of gold is still abundant on the mountains farther east. Lead, silver, iron, and copper, are also given by the Altai mines; coal is worked near Tomsk, and black lead or graphite, obtained from the mountains west of Irkutsk, and from the lower Yenisei district, has become important in commerce. Fur-hunting comes next in value to mining—the sable and ermine (getting scarcer now every year), elks and deer, bears, wolves, and foxes, are hunted for their skins in the forest region. Even the Bengal tiger ranges into southern Siberia. The rivers abound in fish, and “fossil ivory” is found all over northern Siberia, and in the islands beyond in the Arctic Sea; the northern border of the continent, indeed, may be compared to a great graveyard of the Mammoth, the whole tribe of these huge animals having been destroyed apparently by a rapid refrigeration of the climate in a former period. Their dead bodies, carried down by the great rivers to the Arctic shores, have become imbedded there in the frozen soil, and so, preserved in ice, are found with flesh and skin undecomposed. In the more favourable climate of the slopes of the mountains in the south of Siberia, agriculture is capable of great development, and wheat, rye, and barley, give full crops.

6. *People*.—The Russians, or their descendants, who have spread out especially over the plains of south-western Siberia from central European Russia towards Lake Baikal, and down the banks of the four great rivers towards the Arctic Sea and the Pacific, now form by far the largest proportion of the inhabitants of Siberia (2,800,000), and far exceed those of purely Asiatic origin. These “Siberiaks,” or people who have Russian or Polish blood

¹ See pp. 185, 186.

in their veins, have fair hair and broad faces and prominent cheek-bones, and are a frugal, energetic, and hospitable people, though cunning and addicted to strong drinks. They are for the most part the descendants of exiles, of whom till recently about twelve thousand were sent every year to Siberia for political or other offences. The place of banishment for Russian offenders has now been transferred to the far distant island of Saghalien, in the Sea of Okhotsk.

The native populations, Tatars, Mongols, Tunguses, Ostiaks, and Samoyeds, whose distribution we have previously indicated, are either agriculturists, nomadic cattle-breeders, or hunters and fishermen, and these classes are distinguished by law. Chinese are numerous on the south-eastern border.

In religion the majority of the Siberian inhabitants are Christians. Buddhists and Shamanists come next in numbers, then Mohammedans and Jews. Education is as yet only thought of in the towns of the more purely Russian districts of the south-west; there, however, grammar schools and training colleges for schoolmasters have been formed, and since 1878 a university has been established at *Tomsk*.

7. **Divisions, Trade, and Chief Towns.**—All the land belongs to the Russian Government, and it is leased out to village communities and individuals. *Tobolsk* (18,000), below the confluence of the Ishim and Irtysh rivers (tributaries of the Obi), is the seat of Government of Western Siberia, which is divided into the two governments of *Tobolsk* and *Tomsk*. *Irkutsk* (32,000), on the Angara (the main tributary of the Yenisei), a short distance from its outflow from Lake Baikal, is the fortified capital of Eastern Siberia, which is divided into the six governments of *Irkutsk*, *Yeniseisk*, *Yakutsk*, *Trans-Baikal*, *Amur*, and the Maritime Region next the Sea of Japan, ceded by China in 1860, and to which the high forest-covered island of Saghalien or Sakhalin (larger than Ireland) now entirely belongs.

8. Siberia exports metals, furs, and sometimes even wheat to Europe, of its own produce; but the transit trade through the country from China to Europe, although it has decreased since the opening of so many Chinese sea-ports to foreign commerce, is by far the more important. The great trade route and the line along which the chief towns of Siberia lie, is that which passes from the frontier of Mongolia at the trading depot of *Kiakhta* (protected by the fort of *Troitzkosavsk*) near where the Selenga river crosses the boundary south-east of Lake Baikal, through *Irkutsk* on the Angara, *Krasnoyarsk* on the Yenisei, *Tomsk* in the Obi basin (the richest and most civilised town of Siberia, pop. 26,000), and *Tura* on the Irtysh, to *Ekaterinburg*, at the main passage of the Ural belt into European Russia. Along this line the Chinese brick tea, done up in hide-covered boxes, is carried in a six months' journey to the great fairs of the European provinces; in summer by pony caravans and partly by water along the rivers; in winter more rapidly by sledges across the frozen Baikal and over the snow. A great branch line of traffic from this one leads by the Lena river, by boat when it is open or by sledge when it is frozen, to the great market of north-eastern Siberia at *Yakutsk*, whither the furs trapped in all the surrounding country, and the fossil ivory from the far north, are brought to be sent to market by way of *Irkutsk*. In summer steamers now navigate the Obi, Yenisei, and Amur, as well as lake Baikal, and a direct summer highway of trade has been opened between Europe and the two first-named rivers through the Kara Sea, between 1875 and 1878, by the exertions of the Swedish naturalist Nordenskiöld. A great line of telegraph across Siberia (completed 1864 to 1867) has branches to Japan and Peking, uniting these with the European system of communication. *Barnaul* (14,000), in the upper Obi, is the centre of the traffic of the mining region of the Altai.

On the Pacific coast the most important place now is the naval harbour of *Vladivostok* in the south-west corner of the maritime region, on an inlet of the

Sea of Japan. *Nikolayevsk*, at the mouth of the Amur; *Okhotsk*, from which the great mediterranean sea of Okhotsk, ice-bound through the winter months, takes its name; and *Petropaulovsk*, on the south-east coast of Kamtchatka, are the other seaports of the Pacific margin of Siberia.

RUSSIAN CENTRAL ASIA.

1. This division of the Russian Empire spreads out over the vast steppe lands of inner Asia from the Irtysh and the Ural rivers on the north to the mountains bordering the great plateau of Asia and the deserts along the eastern margin of the Caspian Sea. On the south it embraces a great part of the formerly independent Khanates of Turkistan, which have fallen one by one before the northern invader.

2. The northern portion of this region is that of the *Kirghiz Steppe*, a bare stony region, almost everywhere deficient in water, with many salt-lakes and desert patches. In winter its climate is excessively cold, and strong winds whirl the snow about in clouds; in summer the soil is baked with burning heat. The ground here is considered common property by the nomadic Kirghiz: each occupies as much as his herds require, and yet is not a land-owner. The Russians, who occupy the villages and fortified posts chiefly, are few in number; they have divided the country into the provinces of *Uralsk* in the west, *Turgai*, *Akmolinsk*, and *Semipalatinsk*, the "seven castles," in the east, each corresponding to a fortified capital of the same name.

3. The southern portion, now formed into the *General Government of Turkestan*, reaches from the great salt-lake of Balkash southward up to the crest of the Thian Shan range, and westward to the sea of Aral. The main feature of the western half of this territory is the great uninhabited desert called the *Kizil Kum* or "red sands," which spreads out over the lowland between the Syr and Amu, or Jaxartes and Oxus rivers, which descend to the Sea of Aral from the eastern heights. The eastern districts, on the other hand, rise from the low-lying "seven streamland," south of the Balkash, over the high ranges which cover the country north of the great snowy mass of the Thian Shan. Between these forest-covered mountains are fine valleys watered by the head streams of the Syr Daria, and of the streams which terminate in Lake Balkash. These mountains also enclose the remarkable *Issik-kul* or "warm lake," so called because its brackish waters never freeze, which occasionally overflows to the *Chui*, a river which is ultimately lost in the sandy steppes between Balkash and the Aral.

4. The most important districts of Russian Turkistan are the valleys of the *Ili* river, the chief of those which flow to Lake Balkash; that of the Syr Daria, called the *Narin* in its upper course in the mountain region; and that of the *Zeravshan*, farther south.

The upper valley of the first-named, including the town of Kulja, was occupied by the Russians after the authority of the Chinese had been destroyed in consequence of the outbreak of the Tungan rebellion in 1862. A treaty, signed in August 1881, provides for the restoration of this fertile district to China (see p. 217). The Russian fort of *Vernoye* guards the entrance to the upper *Ili* valley.

The upper *Narin* valley, or Ferghana, constituted the chief part of the

former Khanate of Kokan, which was completely incorporated in the Russian general government in 1875. It is a lovely and fertile basin, including a nomadic population of Kara Kirghiz and Kipchaks and settled Usbeks¹ in the towns and villages, some of which, however, are occupied almost exclusively by Tajiks or primitive Persians. *Kokan* (pop. 50,000), the capital of this district, lies in a beautiful valley south of the Syr. On a northern tributary of the Syr lies the city of *Tashkend* (86,000), the largest town of Russian Turkistan, in a fertile plain surrounded by a wall of sun-dried bricks, 12 miles in circuit; it is also the great trading town of this region, and the centre of several great caravan routes. The valley of the third river, the Zerafshan, contains the famous city of *Samarkand* (30,000), once the capital of Tamerlane's powerful empire. Its walls have six gates, and within are the tomb of Tamerlane and many ruinous buildings which testify to its ancient splendour.

5. The *Sea of Aral*, which may now be called a Russian lake, takes its name, the "sea of islands," from the islets which are formed by the sands drifting between the reed patches which grow out into its shallow waters. West of it, as far as the Caspian shores, lies the remarkable bare plateau called the *Ust Urt*, about 300 miles wide. It rises to an elevation of about 600 feet above this sea, and its edges are sharply marked by a steep wall-like descent, almost all round, called the "Chink." After the successful Khivan campaign of 1873, all this eastern border land of the Caspian, as far south as the *Atrek* river and the Persian boundary, was formed into the Russian *Transcaspian province*, and since then a successful campaign against the Turkomans has resulted in a further advance of the Russian frontier to within 150 miles of the famous old town of *Merv*. The province has recently been divided into three districts. These are—*Krasnovodsk*, named after its chief place on Balkan Bay; *Atrek*, in the south; and *Geoktepe*, named after a hill-fort of the Tekke Turkomans, which the Russians carried with great slaughter. A railway joins *Mikhailov* on the Caspian to *Askabad*, the fortified capital of the district named last. *Ashurada* island in the south-eastern corner of the Caspian has been formed into a Russian naval and trading station.

CHINESE ASIA.

CHINESE EMPIRE.

1. **Extent.**—To obtain an idea of the vast extent and importance of the territories embraced within the limits of the Chinese Empire, it may be remembered that these occupy an area very considerably greater than that of Europe, and that their inhabitants are more than twice as numerous as those of the British dominions in all parts of the world. If we compared the extent of the Chinese dominions with England alone we should find that they were nearly eighty times as large.

2. **Relief.**—Occupying all the central and eastern portion of the continent of Asia, their limits are for the most part very dis-

¹ The Usbeks are a people of Turkish race who at the close of the fifteenth century invaded and conquered the small states into which Turkistan was then divided, and till recently they have maintained their hold of these khanates. They are for the most part settled agriculturists and traders.

tinctly marked out by great natural features. The boundary with Russian Siberia on the north runs along the Amur river and the crests of the Sayan and Altai mountains ; towards western Turkistan the alpine heights of the Thian Shan and the Pamir form the limit ; the snow-clad Himalaya range separates China from the hot plains of India in the south, and the mountains of Yun-nan continue the natural frontier eastward again to the coasts of the Pacific.

3. **Divisions.**—Within these wide exterior limits the empire includes a number of countries, some of which are strongly contrasted with one another in their natural features and in the character of their population. Along the eastern or maritime border, where the rivers flowing down from the mountain region of the interior have spread out in wide alluvial plains next the sea, lie China proper, Manchuria, and Corea, filled with a teeming population of busy agriculturists and townsfolk. Within, on the high plateau of Central Asia, the region of bare steppes and deserts, and the mountain skirts round it, are the countries of Mongolia, Eastern Turkistan, and Tibet, thinly peopled for the most part by nomadic pastoral tribes. In this order we may take up the more particular description of these divisions of the great Chinese Empire.¹

CHINA PROPER—the “Central Flowery Land.”

4. This main south-eastern division of the empire includes about a third of its whole extent, reaching from the coast of the Pacific inland for more than a thousand miles. The frontier on the northern side next Mongolia is marked out by the *Great Wall of China*, the most remarkable artificial bulwark in the world, which extends westward continuously almost into the heart of the continent for a distance of 1500 miles, over mountain and valley, and across rivers and ravines. It is a rampart of earth, 10 to 30 feet high, broad enough at the top to admit of several horsemen passing abreast, and was formerly cased on the sides and top with bricks and stones, and was flanked by numerous projections or towers, gates being left at intervals for the passage of travellers and the collection of customs. Now it has fallen in many places, and its gates are negligently guarded,

¹ According to the most recent estimates the area and population of the divisions are as follows :—

	Area in sq. miles.	Population.
China Proper	1,554,000	405,000,000
Manchuria	386,800	12,000,000
Corea	96,800	8,500,000
Mongolia	1,304,000	2,000,000
Tibet	652,000	6,000,000
Eastern Turkistan	432,000	580,000
Zungaria	156,200	600,000
	4,561,800	434,680,000

and northward of Peking the growing Chinese population has spread and settled the country to a considerable distance beyond its barrier. Towards Tibet, on the west, the limits are formed by the high margin of the great central plateau of Asia ; from this edge minor ranges extend eastward towards the ocean, embracing between them the valleys of the great rivers and the wide alluvial plains which these rivers have formed by the gradual process of wearing down the highlands and carrying their débris towards the sea.

5. *Relief.*—The mountains and hill ranges are known by a multitude of local names, but two great groups are generally recognised. These are the *Pe-ling*, or northern series of mountains which ramify eastward from the plateau between the basins of the Hoang-ho and Yangtse rivers ; and the *Nan-ling*, or southern series of mountains, which spread eastward over southern China from the mountains of Yunnan and the edge of the plateau of Tibet, separating the valley of the Yangtse from that of the Si-kiang or Canton river in the south. The most important of the maritime lowlands of China is that known as *The Great Plain*, which extends on both sides of the lower Hoang-ho in the north-east of the country, between the great cities of Peking and Nanking, over an area more than three times as extensive as England (200,000 square miles). Sedulously irrigated or drained, and cultivated in every corner, the great plain of China supports the densest agricultural population in the world. Towards the interior extend fertile river valleys and hills, carefully terraced and tilled, or planted with timber trees. Still farther inland the highlands become less peopled, and are covered with bamboo at the base up to pine woods along their summits, till, on the western borders, in approaching the highlands of Tibet, the country becomes rugged and uneven, the rivers and streams form deep gorges and defiles, and the mountains reach up to the limit of perennial snow.

6. *Islands.*—To China proper belongs the western half of the island which we know by its Portuguese name of *Formosa*, the "beautiful," but which the Chinese call *Tai-wan*, or "Tower-Bay," from the name of its chief harbour. This island, 240 miles long north to south, rises to a high central range (Mount Morrison, 10,800 feet). All the central and eastern portion of it is still in the hands of barbarous aboriginal and Malay tribes. The island of *Hai-nan*, in the extreme south, about 180 miles long by 100 broad, has been more completely subjugated by the Chinese, but in the mountainous interior the submission of the aboriginal tribes is only partial.

7. *Seas, Rivers, and Canals.*—The semi-Mediterranean seas and gulfs of the Pacific along the coast of China are distinguished by separate names. In the north, between the Corea peninsula and the mainland of China, is the *Hoang Hai* or Yellow Sea, 300 miles wide, named from the lemon colour of its waters, filled with the alluvium brought down to it by the Hoang Ho, and so shallow that its muddy bed is frequently furrowed by passing vessels. Within or northward lie the *Bay of Corea* and the *Gulfs of Pe-chi-li* and *Liao-tong*, the two last separated almost entirely from the outer China Sea by the approaching promontories of Shan-tung and Liao-tong. South of the Yellow Sea, between the mainland and southern Japan, with the chain of the Luchu islands and Formosa, extends the wider *Tung-hai* or Eastern Sea ; and from this the Fo-kien Channel, between Formosa and the coast of China, 100 miles wide, leads into the great Mediterranean called the *Nan-hai* or South Sea of China, which is almost completely shut in by Borneo and the Philippine Islands. The coasts of the Yellow Sea bordering on the great plain are low

and flat ; southward thence to the island of Hainan the shores of China rise steep, and are dotted round with rocky islets.

8. The characteristics of the two great rivers of China proper, the *Hoang-ho*, or Yellow River, and the *Yang-tse-kiang*, have been noticed in the general description of the continent. Besides these may be noted the *Pei-ho*, which gathers the waters of the northern portion of the great plain, and forms a high-way of communication between the capital city of Peking and the port of Tien-tsin, near its mouth ; the *Min*, the river of the province of Fokien, by which the Bohea teas are brought down to the port of Fu-chow ; and the *Si-kiang*, the largest river of Southern China, one of the delta branches of which forms the *Chu-kiang*, or river of the great port of Canton. The three largest lakes of China lie immediately south of the course of the Yang-tze. The *Tung-ting-hu*, 70 miles long, and the *Poyang-hu*, nearly as large, are expansions of the mouths of the chief southern tributaries of the Yang-tse in Central China ; the third, the *Tai-hu*, lies south of the estuary.

9. Greatest of all the public works in China is the *Grand Canal*, which traverses the great plain for a distance of 700 miles, passing from Tien-tsin, on the Pei-ho, in the north, across the course of the Hoang-ho to the lower course of the Yang-tse, connecting a system of water communications which extended from the capital to the chief parts of the empire. It is but the greatest sample of the system of canals, great and small, which form a network over all parts of the lowlands of China. During the present dynasty this great work has been allowed to go to ruin in many places, and the Yellow River, in finding a new course for itself, in 1851-53, completed the destruction of a great part of it, so that now the portion northward of the Hoang-ho is dry for ten months in the year.

10. **Climate.**—The climate of a country so extensive as China proper, reaching through more than 20 degrees of latitude, must vary to a great degree, for this reason alone. We have to remember, also, its variations of level, from the low plains skirting the eastern seas, to the high mountain edges of the plateau of Central Asia, on the western borders. In general the temperature is lower than in the same latitudes in Europe.

Three zones may, however, be distinguished—a northern, central, and a southern, differing both in their climate and vegetable productions. The belt northward of the 35th parallel, or of the middle course of the Hoangho, has an excessive or continental climate,¹ with hot summers, and winters so cold that ice a foot thick seals up the rivers and canals, while cold biting winds sweep down from the steppes of Mongolia. The European grains and vegetables are the characteristic crops of this region.

The central zone, extending down to the 27th or 28th parallel, has a milder and more equable climate, the temperature averaging about 62° Fahr., and rising to a maximum of 110° in summer. It has two rainy and two dry seasons in the year. This is the richest portion of China. Tea² and silk are its great products ; rice is produced in enormous quantity in the lowlands, which are inundated from the great rivers. Wheat, cotton, the mulberry,

¹ At Peking the mean temperature of the year is 55° Fahr. ; of summer, 81° ; and of winter, 27°.

² The tea-plant is an evergreen shrub, five or six feet high at full growth, indigenous in China, Japan, and Upper Assam, and its cultivation succeeds best on the slopes of the hills. It is grown in almost every part of China, but the districts which produce the finest teas are limited chiefly to the maritime borders of China between the lower Yang-tse and the Si-kiang.

sugar-cane (imported from India in the eighth century), and bamboos, are other important resources. The eastern part of this zone is specially famed for its silks and cottons; the central is called the granary of China; and the western mountains supply most of the Chinese timber.

The southernmost belt has an almost tropical climate. Here the rainy season lasts from April till October, while the south-west monsoon is blowing, and dreaded "*typhoons*," as the hurricanes of the South China Sea are named, are of not infrequent occurrence from June till September.¹ Here oranges, mangoes and bananas, ground nuts, sweet potatoes and yams, besides rice, are the staple fruits and vegetables, and in the interior provinces the best lands are given up to the cultivation of the opium poppy.

11. *Minerals*.—The mineral wealth of China is very great. The province of Yunnan, in the south-western corner of the country, has perhaps the largest gold workings in the world. Here, also, is obtained the famous *pe-tung*, or white copper. Silver, lead, iron, tin, and cinnabar, are widely distributed. Coal formations seem to extend almost all over the basin of the Yang-tse, as well as in the provinces north of the lower Hoang-ho; and though it has been mined in a rude fashion, and used as fuel in China since the thirteenth century, the vast supplies seem to be scarcely touched. Southern Yunnan furnishes a variety of precious stones—rubies, amethysts, sapphires, topazes, opals, besides malachite, and the steatite or soapstone, in which the Chinese carve figures of all sorts.

The much-prized Yu, or *jade* stone, comes from the valley of the Hoang-ho; lapis lazuli (for the preparation of ultramarine) is found in the mountains of Che-kiang, near the centre of the east coast region. Large beds of porcelain clay occur in this province also, and in its neighbouring one of Kiang-si. Towards the north-western borders hot springs are numerous, and the fire-wells or gas springs of the western province of Se-chuen are famous.

12. Thus, owing to its variety of landscape and character, and the consequent diversity of its vegetable products, and to its rich endowment with mineral wealth of all kinds, China proper is in a position to render its people practically independent of the outer world. To this may be attributed the disdain with which the Chinese have received the outer "barbarians," and the exclusiveness they still maintain in a great part of the empire.

13. *People*.—The Chinese, as we have seen in the general description of the continent, belong to the Mongolian race. Within China proper they are essentially one people, more uniform in type than people in any other part of the globe of equal extent, the differences, except in dialect, being scarcely greater than are to be found between Englishmen of different counties. Parchment-coloured skin, coarse black hair, high cheek-bones, and oblique eyes, are characteristic throughout. There still remain, however, within China proper, a few isolated remnants of aboriginal tribes, who resemble the mountaineers of North-Eastern India much more than the Chinese. Such are the wild *Miautze* and *Yao* tribes of the more inaccessible parts of the Nan-ling or southern mountains, especially in the province of Kwang-si. The *Hakha* and *Punti* of the neighbourhood of Canton, and the piratical *Hoklos* of Fokien, are also strange tribes, speaking languages which are unintelligible to the surrounding peoples. The mountains of the central parts of the island of Hainan, also, are still occupied by savage *Li*, supposed to be related to the *Miautze*, surrounded in the maritime plains by Chinese.

¹ Canton has a mean temperature of 70°; in July and August the thermometer frequently rises to 100° in the shade; winter temperature averages 54° Fahr. Ice sometimes forms, and snow has been known to fall overnight.

14. Religion and Education.—We have previously referred to the religions of China. There are temples of Confucius in every great town, and twice a year, in spring and autumn, sacrifices of animals, fruit, and wine, are offered in honour of the sage. The majority of the Taoists, or followers of Laoutze, imitate the Buddhists in their monastic life, and many of them live as hermits in the mountain caves of the upper Yang-tse, or in the most romantic spots of the mountains of China. The Grand Lama of Tibet is the pope of the Buddhist Church, but the priests in China have no political power, and are viewed with contempt by the literary and governing classes. In Peking, however, several large monasteries of Tibetan and Mongolian Buddhists are supported at the expense of the Government.

Besides these three national systems, *Mohammedanism*, supposed to have been introduced by a Tatar tribe which was called in to the assistance of the Chinese during the Tang dynasty, has numerous adherents in the northern and western provinces. They hold aloof from the Pagan Chinese, and have made so many native converts, that in their frequent rebellions they have seriously threatened the imperial power. The native Roman Catholics of China are said to number more than a million, but Protestants are very few.

Standing in the way of all progress in China is the deep-rooted universal superstition called *Feng-shui*, or *Geomancy*, a form of divination, the professors of which must be consulted in every proposed undertaking, to determine its good or bad luck. Education, since it is the high road to official employment, rank, and wealth, in China is eagerly sought by all classes. Competitive examinations, held in the capital every three years, presided over by examiners from Peking, sift out the most proficient candidates for public service; but as the Chinaman objects to be wiser than his forefathers, the subjects of examinations are stereotyped classics, and of all modern discoveries in physical science and the arts he remains profoundly ignorant.

15. Just as the laws which used to prohibit the admission of foreigners have gradually been broken down, so those which hedged round the natives of China, restricting them from emigration to other lands, have given way, and now the "*coolies*" are free to embark in vessels which have been inspected by the customs authorities. Numbers of Chinese have now formed busy communities in many of the ports of the Malay Peninsula, in Java and the Philippines, as well as in Calcutta and other parts of India, and in Australia: across the Pacific they have taken root in California, and a Chinese town has grown up as part of the city of San Francisco. Most of these emigrants economise abroad to return to spend their gains and die in their own country.

16. Industries.—The skill of the Chinese in husbandry, their painstaking irrigation, and manuring of the lowlands and terracing of the hills, has already been noticed. Agriculture is held in higher estimation here than in any other land in the world. Each new-year's day a grand state ceremony is performed in its honour, the Emperor himself repairing to the sacred field and tracing a furrow with the plough. As it was two thousand years ago, so it is at the present day the custom of the Empress and her ladies every spring to set an example to the people by laying aside their ornaments and picking mulberry leaves to feed the silkworms.

Before European manufactures had reached their higher development, fine "Nankeen" calico was largely imported from China to Europe. "China ware," or porcelain, was first made by the Chinese, and so ignorant were the early Portuguese traders of its value, that they called it "*porcellana*," believing it perhaps to be made of shells; the secret of its manufacture was not discovered in Europe till the beginning of the eighteenth century. The decomposed felspar or "*Kau-ling*" (Kaolin: also called Pe-tun-tz), occurs, as we have noticed, in the maritime provinces of central China; and at King-te-chin in

the province of Kiang-si, there are porcelain factories which were founded by an emperor in 1004 A.D., and in which upwards of a million workmen find constant employment. The Chinese also excel in carpentry; paper-making from the bamboo was invented among them as early as the second century B.C. They are highly skilled in the use of metals; bronze vases exist which date from 1760 B.C., and the great bells on the towers of Peking, cast during the Ming dynasty, are still perfect; the sonorous *gong metal* alloy is as yet a Chinese secret; in their delicate embroideries, carvings in ivory, engravings on wood and stone, lacquered wares, and rich silks and satins, they show astonishing handicraft.

17. *Trade*.—For a long period, as we have previously noticed, the trade and intercourse of Europeans with China was jealously restricted to the single port of *Canton*, and it was not till after the war with Britain, which terminated in 1842 that the additional ports of *Amoy*, *Fu-chow*, *Ning-po*, and *Shanghai*, were thrown open, and that the island of Hong-kong, at the mouth of the Canton river, was ceded in perpetuity to Britain. With these five open ports British trade with China assumed huge proportions, and though the Chinese evaded the treaty wherever practicable, no serious dispute arose till 1857. In that year Canton was stormed by the British and French forces, and next year the ports at the mouth of the Pei-ho river in the north were taken, opening the way to Peking. The treaty of *Tien-tsin*, which concluded this contest, obtained the right of residence of British diplomatic agents at Peking, and opened to trade, in addition to the five ports already named, those of *Kiung-chow* in the island of Hainan; *Swatow*, between Hong-kong and Amoy; the river ports of *Chin-kiang*, *Kiu-kiang* and *Hankow*, on the Yang-tse; *Teng-chow* and *Che-foo* on the coasts of the northern promontory of Shantung, *Tien-tsin* itself, and the trading town of *Niu-chwang* in southern Manchuria. The ports of *Tai-wan*, the capital of Formosa island, and of *Takau*, south of it, were also freed, but, from their insecurity, foreign commerce with the island has now been transferred to the river *Tamsui* and *Ke-lung* on the north side. By a convention made in 1876, the Chinese government consented to open three more towns to foreign trade, namely *Pukhoi* in the southern province of Kwang-tung; the seaport of *Wen-chow*, between Ning-po and Foo-chow; *Woo-hoo* on the lower Yang-tse, beyond Nanking; and *I-chang* on the upper Yang-tse, 360 miles farther inland than Hankow, and nearly in the centre of China proper. At the same time permission was granted for the residence of British agents at the far inland town of *Chung-king* in the province of Sze-chuan, on a northern tributary of the Yang-tse called the Kialing. No European merchants, however, are to be permitted to traffic here until steam navigation shall have been extended to this remote point.

The maritime intercourse of China is carried on mainly with Britain and her colonies, in a much smaller extent with the United States, Germany, France, Denmark, Spain, and Holland. *Tea* and *silk* are the staple exports, all others being insignificant in comparison with these.¹ Among imports, that of *opium* from India represents by far the largest sum.² *Cotton goods* from the manufacturing centres of Europe form the other great article of importation to China. The taxation of foreign goods passing into the country is, however, exceedingly heavy, so much so as to stimulate smuggling and bribery of all sorts.

A large *overland* traffic is also maintained with Russia. Great quantities of the finest tea, made up into "bricks," as well as silk stuffs, pass northward from central China, converging to the chief gate in the great wall, that of

¹ Between 1870 and 1879, 178 million lbs. of tea were annually carried from China to the United Kingdom.

² About £8,000,000.

Chankia-kow or *Kalgan* north-west of Peking, whence the camel caravans take their way northward across the dreary steppes of Mongolia to the Siberian frontier at Kiakhta, from which depôt the Russian traders convey the goods westward to the great fairs in Europe. Recently endeavours have been made by the British to open up an overland trade route through Yunnan in south-western China with Burmah and India. A vast internal traffic is carried on within China itself by the imperial roads, of which there are said to be 20,000, as well as by the numerous canals and rivers, which are crowded with junks and boats. Recently a first attempt was made by Europeans to introduce railways into the country, by constructing a short line from Shanghai to Woo-sung, but half of this had no sooner been opened for traffic (in June 1876) than the Chinese authorities interfered, purchased the line, and closed it.

18. **Government.**—The despotic form of government which prevails in China dates back from the time of the first emperor, about 220 B.C., who built the great wall to keep out the very Tatars whose descendants now occupy the throne of China. The reigning monarch is absolutely supreme, spiritual as well as temporal sovereign. His person is sacred, and when he is carried abroad, the people return to their houses and bar the doors, for they may not look upon him and live. He is high priest of the empire, and can alone perform the great religious ceremonies, and he alone has the power of appointing those officials or *mandarins* of all grades whose edicts, signed by his vermilion pencil, pass into law. The administrative government comprises the central division at Peking, where sits the great council consisting of four members or ministers of state (*Ta-hyo-si*), chosen by the emperor (two of Tatar and two of Chinese origin), besides two assistants from the great college, whose duty it is to see that nothing is done which is contrary to the civil and religious laws of the empire. In the second division are the governors of the eighteen provinces into which China proper is divided, and of the three provinces of Manchuria; in the third division are the presidents of the vast regions of inner and outer Mongolia, and of Tibet. Under the council are the six boards of government (*Liu-poo*) for the administration of the civil service, finance, rites and ceremonies, military affairs, public works, and criminal law. There is besides an independent board of public censors who are privileged to present any remonstrance to the sovereign, and attend the meetings of the government boards.

19. Each of the eighteen provinces (the names and positions of which will be best learned from the Map) has a governor, who has a small military force at his disposal, but does not command the forces of the province. When the Manchu Tatars conquered China, they divided their army into four corps, distinguished by white, red, blue, and yellow banners. Four more corps were afterwards added, and afterwards eight similar corps of Mongols and eight of Chinese. The chief commands are in the hands of high officers of the three nationalities, the Manchu prevailing. Manchu garrisons hold all the cities and ports, and are established along the frontiers. The standing Chinese army acts mainly as a constabulary. Four ironclads built in England were received by the Government in 1877 as the foundation of a navy.

20. **Towns.**—*Peking*, the capital, on the northern border of the great plain, consists of two distinct cities, the older Chinese and the newer Tatar or imperial town, forming together an irregular oblong surrounded by high castellated walls about fifteen miles in circuit. The population probably amounts to half a million. Marco Polo, who visited it in 1271, gives a description of it which serves almost exactly at the present day, speaking of its rectangular form, its wide straight streets, the incessant traffic maintained in its thoroughfares, and the closing of the gates at night to the sound of a bell. About eight miles north-west of the city lies the imperial park, with lotus lakes and marble bridges, temples and pagodas, in the midst of

which the famous Summer Palace stood ; it was sacked by the allied (English and French) troops in 1860, and remains as they left it, a heap of ruins.

Nanking (450,000), formerly the capital, on the Yang-tse, is also surrounded by walls, which have a length of eighteen miles and include much open ground within. The city suffered greatly on its capture by the Taiping rebels in 1853, and then its famous porcelain tower, which was 261 feet high, was destroyed. Like the capital, Nanking has wide streets and open spaces ; but other great towns of China present almost uniformly the appearance of a great mass of closely-packed red-tiled houses, with overlapping eaves excluding light and air, and only allowing a maze of narrow alleys between. In these the only glimpse of the sky or breath of fresher air can be got on the house-tops, which are commonly decked with flowers set in pots, and furnished with water jars in case of fire. The uniform level of the roofs is only relieved by the imposing official residences, pagodas, and temples, or in the southern provinces by the lofty square towers of the pawnbroking houses. Nearly every town is walled.

Large towns might be enumerated by hundreds. At least fifty are known to have a population of upwards of one hundred thousand, but all those in which foreigners have as yet any special interest have already been named. The number of foreigners resident in China is very small. In 1872 there were only 3660 in all, and more than half their number were living in the city of Shanghai.

The British possession of *Hong-kong* island, or "sweet waters," is about eight miles long, and forms an irregular rocky ridge, with peaks rising to 1825 feet. On its north-west the European capital town of *Victoria* has arisen. It is laid out in terraces on a steep slope, and has numerous fine stone buildings and wharves, and is lighted with gas. Its commerce is not very large, but it is important as the headquarters of the British naval and military establishments in this part of the world. The population of *Victoria* exceeds 100,000, and comprises about 6000 Europeans and Armenians.

21. *Kansu*.—Though China proper, geographically considered, is contained within the limits we have indicated, the jurisdiction of the north-western province of *Kansu* reaches far beyond the limit of the great wall, over a wide region of the Central Asiatic plateau, extending north-westward as far as the borders of Eastern Turkistan and Zungaria, at the eastern termination of the range of the Thian-shan. Enclosed between the high snow-capped range of the *Nan-shan* mountains on the south, and of the *Thian-shan* on the north-west, this region of the plateau has the general character of the steppes of Mongolia and of the Gobi desert, afterwards described, of which it forms part. It is important as embracing within it one of the great trade routes of Central Asia. This passes from *Lan-chow*, the capital of Inner Kansu, through the *Kia-yu* gate of the great wall, by a ten days' journey across the desert, in which herds of wild horses, asses, and mules are seen, to the fertile oasis of *Hami*, at the southern base of the Thian-shan. Hami is an important trading place, at which the wool of Turkistan is exchanged for the products of Central China. A continuation of this trade route northward leads over a pass of the Thian-shan (8980 feet above the sea), which is easily crossed by carts, to the oasis and town of *Barkul*, at the northern base of the range. Southern Kansu, along the base of the high Nan-shan mountains, is described as a most fertile country, resembling the corresponding region at the base of the Himalaya range, the hillsides being clothed with splendid rhododendrons. This is also the native country of the medicinal *rhubarb*, which grows in great perfection in the lower valleys.

MANCHURIA.

This division of the Chinese Empire, the native country of its imperial family, extends north-eastward of China proper, occupying the wide basin which extends about 500 miles between the *Kinghan* mountains, forming the edge of the great Asiatic plateau, on the west, and the *Shan Alin* or Long White mountains, from their snows on the north side, which divide off the peninsula of Corea on the east. The boundary towards Siberia since 1860, when the whole of Northern Manchuria was ceded to Russia, has been the *Amur* river. In the south the basin opens to the Gulf of Liao-tong and the Bay of Corea within the Yellow Sea, the length of the country north to south being about 800 miles.

22. **Rivers.**—The chief river of the country is the *Sungari*, about 1000 miles long, flowing from the Kinghan range east and north-east to join the boundary river, the *Amur*. The *Ussuri*, another considerable tributary from the south, forms the boundary between Manchuria and the Russian maritime province. It receives the overflow of the large lake *Hinka*, 50 miles long, which lies on the inward slope of the coast mountains at a height of about 2000 feet above the sea. The southern river of Manchuria is the *Liao-ho*, or *Sira-Muren*, which flows also from the Kinghan slopes, but turns southward to the Gulf of Liao-tong.

23. **Landscape.**—Forests cover the whole country in the north. In the west great rolling prairies or grassy plains, on which large herds of cattle find pasture, extend at the base of the Kinghan range, enclosing a bare salt steppe called the desert of *Korchin*. The *Sungari* valley is a fertile region, and the southern portion, in the basin of the *Liao-ho*, resembles Northern China in its irrigated fields of rice, and in its yield of sesame, hemp, and cotton, and of the best tobacco of the empire. Here the climate is most favourable. Towards the north the winters become exceedingly severe; the frosts destroy the grass in August; in September snow begins to fall, and the soil is hard frozen from October till April. Wild animals and birds are abundant, and the rivers are well stocked with fish.

24. **People.**—The Manchus (of lighter complexion and heavier build, and having less scanty beard than, though otherwise resembling, the Chinese) are believed to belong to the great Mongol family of the *Tunguses*,¹ and form the most advanced and civilised branch of their stock. As early as the thirteenth century they had become a powerful and warlike nation, distinguished by high intellectual and physical qualities. During the wars of the fifteenth century, when the Manchus overcame the Ming dynasty in China, the greater part of the population of the country seems to have been drawn off southward into the newly-conquered region. The Chinese in turn have since swarmed into Manchuria, so that they now form the bulk of the population here. The Manchu language also has all but disappeared, and the trade and traffic of the land is in the hands of the Chinese. Those of the Tatars who remain in the outskirts of the country living a nomadic tent-life still distinguish themselves as persevering hunters, expert with the bow and arrow, and bold riders. Mohammedanism has spread widely among them, and the followers of this creed appear

¹ See p. 192.

to keep themselves aloof, occupying chiefly the hilly country of the east, and being a source of frequent trouble to the Chinese Government.

25. Division and Chief Towns.—Manchuria is divided into three provinces; the southern called *Shing-king*, or *Liao-tong* nearest China proper, and sometimes considered as its most northerly division, the most populous and agricultural, and the most completely Chinese portion of the land; and the two provinces of *Tsitsihar*, in the north-west, occupying the basin of Nonni tributary of the Sungari, and of *Girin* or *Kirin*, between the river and the Shan Alin mountains, in the north-east. The Chinese governor has his seat at the walled city of *Mukden*, on a tributary of the Liao-ho, near the centre of Shing-king. This province is governed in the same manner as those of China proper, but the northern provinces are under military discipline. The town of *Tsitsihar*, situated on the Nonni, the chief place in the north-western province, is a Chinese penal settlement for the worst classes of criminals, pirates, insurgents, members of secret societies, and robbers, under strict military guardianship. *Kirin*, on the upper Sungari, the chief place in the province named from it, is described as a great collection of huts surrounded by an earth wall; here most of the trading-vessels for the Amur are built.

The chief trading town and outlet of Manchuria is that of *Niuchwang*, to which reference has previously been made as one of the places thrown open to foreign traffic by the treaty of Tien-tsin. It lies 25 miles south-west of Mukden and 30 miles from the sea, on an unnavigable tributary of the Liao-ho. Its port of *Jinhua*, at the mouth of the Liao-ho, sends out grain, hemp, hides, and indigo, but is closed by ice from November till March.

COREA.¹

26. The kingdom which occupies the large peninsula of Corea southward of Manchuria might almost be treated as a separate country, since its dependence on China is now merely nominal. It is rigorously closed to European intercourse, and our knowledge of it is almost confined to the accounts given of it by the Jesuit missionaries, who found their way into it for a short time in the seventeenth century. In extent, the peninsula is somewhat larger than the island of Great Britain, having a length from north to south of about 600 miles, and an average width of 150 miles.

27. Physical Features.—In the north, where it joins the mainland, the high snowy range of the *Shan Alin* separates it from Manchuria, and north-westward, between it and the southern Manchurian province of Shing-king, where the land is lower and access more easy, a belt of neutral and uninhabited territory, about 25 miles wide, extending from the high mountains south to the bay of Corea, is jealously maintained as a barrier to intercourse.

All along the eastern or Pacific margin of the peninsula there extends a chain of high mountains with an almost precipitous slope to the sea on this side, forming the backbone of the peninsula, like the Apennines of Italy. One of the peaks, measured by our hydrographers in coasting along, was found to be

¹ From *Korio* (*Kaou-li* of the Chinese), the founder of a dynasty now extinct; the Korean name of the kingdom is *Tiao-sien*; another Chinese name for the peninsula is *Chao-sien* = "the freshness of the morning."

8114 feet above the sea;¹ another is 6310 feet, and several exceed 5000 feet. The country slopes gradually from this eastern range westward towards lowlands which border the Yellow Sea, and while the high outer coast is free from islands, the lower, inner, side is fringed with numbers of these. The largest Korean island, however, is the mountainous one called *Quelpart*, which rises 50 miles south of the extremity of the peninsula, and which has a length of 45 miles.

28. **Rivers.**—The chief rivers of the peninsula, which may be compared generally with those of England in length, flow naturally from the high eastern range towards the inner Yellow Sea, the longest from north to south being the *Ya-lu* (or *Ya-lu-ula*, from *Ula* the Manchu word for river), the *Ta-tong*, and the *Salayee* (called *Han-kiang* by the Chinese), which may be called the Thames of Corea, since the capital town of *Seyul*² is on its banks. Another important river, the *Tu-mén*, occupies a valley in the extreme north-eastern portion of the Corea, flowing northwards between the *Shan Alin* and the coast range, and bending suddenly south-eastward through a gap to reach the Pacific south of *Possiet Bay*, and to form the boundary at its mouth between the Russian maritime province and the Korean territory. A smaller river, called by the Chinese *Tsin-kiang*, drains the extremity of the peninsula southward to the strait which separates it from Japan, reaching the sea at the Japanese port and colony of *Fushan*.

29. **Climate.**—The climate of a country so varied in elevation must be very diverse; though the peninsula lies between more southerly latitudes than Italy, its average annual temperature is not higher than that of the British Isles, while the extremes of heat and cold in winter and summer are much wider apart. The hot, moist, south-west monsoon blows in the summer half of the year, but the temperature does not rise so high as in the corresponding parts of the plain of China; the northerly winds of winter bring frosts that freeze the northern rivers *Tiumen* and *Yalu* so hard that horses and heavy baggage cross them with perfect safety. Even in the extreme south the winter cold seems to be excessive.³

30. **Products.**—The northern and eastern mountain regions seem to be forest-covered and thinly peopled, but the lowlands of the west yield rice, besides buckwheat, barley, and millet, tobacco, hemp, and cotton. The important product of the country in its traffic with China is, however, the *Ginseng* plant, the root of which is highly esteemed by the wealthier Chinese as a remedy for almost all diseases, and is regarded as possessing extraordinary virtues. The royal tiger and panther are so numerous that their skins form an important article of commerce with foreigners through Chinese traders; stags, musk-deer, foxes, hares, and wolves, are abundant, and the skins of sables from Corea form a prominent article in the tribute to the Emperor of China. Ponies and large oxen are the domestic animals, sheep being almost unknown. Whales and seals frequent the coasts in winter, and are taken by the Korean fishers. Gold appears to be so abundant that it bears a much smaller value in proportion to silver than it does with us; lead, iron, and coal are also mined and used with skill.

31. **People.**—Belonging to the same Mongolian family the Koreans resemble the Chinese in feature, but have generally a darker complexion. Their civilisation has been derived from that of China, and the Chinese language and Confucian philosophy are studied by the "literati" of Corea. The ordinary

¹ It was named by them *Hien Fung*, after the emperor who was reigning in China at the time; this of course is not the Korean native name.

² Also known as *King-ki-tao*, *Kim-phu*, *Kjöng*, or *Sayool*.

³ A Japanese correspondent of one of the home journals (January 1876) reports, that in January the thermometer at *Fushan* fell as low as 22° F.

language of the Koreans, unlike that of the Chinese, seems to be based on a distinct alphabet, though a great number of Chinese characters are retained; Buddhism is the popular religion.

32. **Government.**—Since the time when the kingdom was established under the auspices of a Chinese emperor (A.D. 1392), the kings of Corea have received investiture at his hands on ascending the throne, but in course of time this ceremony has become a mere formality, and the Chinese government has no political control over that of Corea. The king is absolute ruler, temporal and spiritual; all the land is his, and he claims a tenth of all agricultural produce. In other points the administration resembles that of China, and the country is divided into eight well-defined provinces, subdivided into counties and districts.

33. **Trade.**—The King of Corea presents an annual tribute to the Emperor of China, which is carried by a caravan of about 200 men, with horses and waggons, that marches in the depth of winter across the frozen Yalu by Mukden round to Peking, carrying valuable packages of ginseng, furs, and other native produce. All legitimate external traffic is confined to dealings with China, by the merchants who accompany the yearly tribute, and with Japan, the latter country having free ports and factories at *Fushan*, at the mouth of the Tsin-kiang, the southern river of the peninsula, and *Jinsen-ko*, in the province of Kankintai; but a large contraband trade is kept up by Chinese junks from Shan-tung, the nearest Chinese promontory to Corea.

MONGOLIA.

34. From the snowy crests of the *Ala-shan* mountains, along which winds the great wall that shuts off China proper on the south, and from the *Khingan* mountains in the east, separating it from Manchuria, the vast steppe land of Mongolia reaches away northward a thousand miles to the base of the *Altai* mountains and westward to the *Thian-shan*. If we compare its extent to Great Britain we find that it occupies a space fifteen times as great.

In strong contrast to the people of China, the inhabitants of this vast region build neither towns nor villages, have no houses or settled abodes, cultivate no fields, but dwell in "yurts" or tents, and wander about with their herds between those districts of their country which are most favoured with water and pasture.

35. **Physical Features.**—Within its girdle of forest-covered and snow-capped mountains, the tableland of Mongolia, 3000 to 4000 feet above sea-level, presents a border of grassy steppe lands enclosing the central and characteristic feature of this region, the *Gobi* or *Shamo*¹ desert, a tract of not less than 2000 miles in length, with an average width of 500 miles. The aspect of the country in crossing the Gobi is that of low downs, the whole being of a rocky or stony nature rather than sandy, though patches of sand do occur every here and there. What vegetation exists is composed of weeds, "scrub," and heath, there being scarcely any grass, and only a dwarfed and stunted tree here and there in the passes of the low rocky ranges, that cross the desert at uncertain intervals in parallel lines from east to west. Northward towards Siberia the table-land becomes diversified with forest-covered hill ranges, and valleys well clothed with grass.

¹ Both of these terms, Mongol and Chinese, mean desert: the Chinese also call this region the *Han-hai* or "dry sea."

36. Rivers and Lakes.—From the mountain belt surrounding the central desert a few streams descend towards it to terminate generally in small salt-lakes. Along the northern borders towards the Altai, where the land becomes more broken by mountains, and where the ranges, called the *Tannu-ola* and *Khangai*, extend into the table-land from the north-west, a number of enclosed high basins are formed, each with its central lake; such are the *Ubsa Nor*, the *Turgen* and *Kara* lakes, the *Uliungur*, and others in the north-west of Mongolia. From the northern mountains of Mongolia also the Yenisei receives its head streams, the *Ulu kem*, and the *Selenga* flowing from the high lake called the *Kos-gol*; and the shallow *Kerulen*, flowing along the northern edge of the plateau, feeds the *Dalai Nor* on the north-eastern border of Mongolia, whence the *Argun* river flows to the Amur.

37. Climate.—The climate of the Mongolian plateau is excessive or continental in a very high degree. At all seasons of the year there is a great daily variation of temperature, which, along with its deficient rainfall, accounts for its barren character. In October large portions of the country are covered with snow, bitterly cold north-east winds sweep over it, and in the depth of winter the temperature scarcely rises above the freezing point;¹ in summer the midday temperature is correspondingly high. Whirlwinds of sand are frequent in April.

38. People.—The inhabitants of Mongolia, thinly scattered over its inferrible surface, fall into three chief divisions—(1) The *Kalkas* of the northern side of the plateau, and of the upper valleys of the streams which flow northward towards the Siberian plain, who are types of the pure Mongol race, shown in their high cheek bones, round flat faces, oblique eyes, scanty hair, and square thick set figure. The *Kalkas* are purely nomadic and pastoral, hating a settled life, and despising agriculture: their wealth is in their flocks and herds, their favourite domestic animal the horse, their habitation the “yurt” or felt tent; (2) The *Suniteh*, who roam over the south-eastern region of the Gobi; and (3) The *Chakhars*, *Tumets*, *Ordos*, *Oluths*, and *Turguths*, who occupy the plateau south of the Gobi outside the great wall of China: this section lives in close intercourse with the Chinese who have extended their agricultural colonies beyond the great wall, and by frequent intermarriage with these have lost to a great extent the distinctive Mongol type, imitating the Chinese in dress and manners, but not in industry, being for the most part rogues and thieves, who make the passage through the southern region difficult for travellers.

The Mongols pay no tribute to China, but are liable to military service, and the country is accordingly divided into *banners* or districts under the control of Mandarins of high rank. The *Kalkas* are also grouped under their own hereditary princes, who claim descent from Genghiz Khan.² The Chinese have colonies in the small towns of northern Mongolia, at *Urga*, the “camp” in the basin of the Selenga river, a town of tents, with a few Chinese houses surrounded by a palisade; and at *Uliassutai*, 500 miles west of it, a straggling town of Chinese houses and “yurts.” These places are also the residences of the high civil governors of Mongolia. *Kobdo*, still farther west, near the Kara lake, has a Chinese fort and trading town surrounded by a crowd of Mongol tents.

In religion the Mongols are Buddhists, and almost every third man among them belongs to one or other of the lower grades of the Lama priesthood, who exercise almost unlimited influence over their secular brethren, and are con-

¹ At Uliassutai, 5736 feet above the sea, Mr. Ney Elias found that in November the thermometer seldom rose to 20° F. even in the middle of the day.

² The Khanates of the *Kalkas* tribes, in order from Zungaria west to Manchuria east, are *Kobdo*, *Tangnu Ulianghal*, *Zassaktu*, *Sannoin* or *Uliassutai*, *Tuchetu* or *Urga*, and *Tseten*.

sulted in every trivial affair of ordinary life. At Urga a *Kutuktu*, archbishop or cardinal, resides: this is the headquarters of Lamaism in Mongolia, and a pilgrimage to this place is considered only second to one made to L'assa in Tibet.

39. *Trade*.—The Mongols are best known to Europeans along the trade route which leads across the country in a direct line from the gate of *Kalgan* in the great wall of China, north of Peking, by way of *Urga* to the Russian frontier at the contiguous frontier trading stations of Maimatchin and Kiakhta, near the Selenga river on the border of Siberia. On this route they act as guards and camel drivers to the camel caravans which carry tea, silks, porcelain, and rhubarb, 900 miles across the desert. At *Maimatchin*, which is a thoroughly Chinese town in contrast to Russian Kiakhta beside it, but on the opposite side of the frontier line, a great trade is carried on, especially at the winter fair in December, in exchanging teas and other southern produce for furs, woollen cloths, and linens, brought thither by the Russians.

Another very important trade route, which is not yet frequented, but which, from its more direct line, will probably become the great highway of trade between China and Russia, is that which passes from Lan-chow, the capital of Kansu, the innermost province of China proper, through the great wall at the gate of Kia-yu, by way of the oases of Hami and Barkul, at the eastern extremity of the Thian Shan range; and thence northward across western Mongolia to the Russian frontier at Zaisan, near the lake of that name, from which the navigable Irtish river flows to join the Obi.

ZUNGARIA.

40. To the west of Mongolia, between the Altai on the north and the Thian Shan on the south, and the Russian boundary of central Asia on the west, lies the territory called *Zungaria*, formerly the powerful kingdom of the Zungares (from Zun-gar = left-hand, or left wing of the Mongols) which has been in the hands of the Chinese, with interruptions, since 1759, when it was placed under military colonies of south-eastern Mongol tribes, and peopled in part by exiles from China. The Chinese call it *Thian-shan pe-lu*, the land north of the Thian Shan.

41. It is a region of high mountain basins enclosing lakes, and on the west forms the upper valleys of the rivers which flow down to western Siberia and the low steppes of central Asia. Here the *Black Irtish*, flowing to the Zaisan lake on the other side of the Russian boundary, and the *Ili* river, the chief feeder of the Balkash salt-lake, take their rise. The valley of the latter river, the most fertile and populous division of Zungaria, including the town of Kulja, was occupied by the Russians during the disturbed period of the Tungani rebellion in 1871. The Chinese lately recovered their hold of the northern and central divisions of Zungaria, those called *Tarbagatai* and *Kur-kara-usu*; and by virtue of a treaty concluded with Russia in 1881, they have obtained possession of the remainder on condition of indemnifying Russia for the expenses of the temporary occupation. Kulja, and the country around, has a mixed population of Taranjis, or descendants of penal colonists, banished hither by the Chinese a century ago; and there are also Tunganis, Chinese, Kalmucks, Kirghiz, etc., many of whom have preferred emigration to a return under Chinese rule.

The chief settlements in the country are those which lie along the trade route that traverses the northern base of the Thian Shan, passing westward

from Barkul in the extreme north of the province of Kansu, through the posts *Guchen* and *Manas* to *Kur-kara-usu*, whence there are lines of communication westward to the Ili valley, and northward over the mountains to the Chinese frontier fort of *Chugutchak*,¹ and to the Russian border post of *Zaisan*. By these lines a considerable caravan traffic is maintained with the Russian central Asiatic provinces and with the eastern parts of European Russia. Tea is brought from inner China by the above-mentioned route to Chugutchak, and is carried thence by Kalmuck caravans of as many as seventy camels, across the Kirghiz steppes to the frontier markets near the Ural.

EASTERN TURKISTAN.

42. We now come to the most westerly portion of the Chinese empire, the Mohammedan rulers of which, claiming descent from Genghiz Khan, were first subjugated in 1758; this is the large territory known as *Eastern Turkistan*, or *Chinese Tartary*, which, during its period of independence of Chinese rule from 1864 to 1877, attracted great attention both from the side of British India and from that of the Russian provinces of western Turkistan.

43. *Landscape*.—The Chinese name this region *Thian-shan-nan-lu*, the country south of the Thian Shan. This range encloses it on the north; westward rises the high edge of the *Pamir* plateau, and on the south the *Kuen-lun* range extends away eastward to join the Nan-shan on the borders of China, forming a northward slope of the great Tibetan plateau comparable with that of the Himalayan descent on the south. Eastern Turkistan thus appears like a huge bay closed by a barrier of the highest mountains of Asia, north, west, and south, but opening out in the east to the wide steppe land of the interior of the Asiatic plateau and towards the vast "dry sea" of the Gobi desert. Though from its complete enclosure the country is almost rainless, there extends round the base of the mountains a crescent of fertile land, which is watered by the streams descending from the mountain snows and glaciers, many of which are exhausted of their supplies in filling a network of irrigation canals. This cultivated border, which lies at a general elevation of about 4000 feet above the sea, is exceedingly rich in wheat fields and orchards, as well as in cotton, flax, hemp, and other products. All the inner basin of the country within the fertile crescent at the base of the mountains is, however, of the same character as the Gobi of Mongolia of which it forms part, though it is known more commonly as the *Takla Makan* desert.

44. *Rivers*.—The chief of the streams flowing from the mountains at the head of the great bay of Eastern Turkistan are those named from the towns on their banks, the *Kashgar-Daria*, the *Yarkand-Daria*, and the *Khotan-Daria*; these three unite eastward to form the *Tarim* river, which takes its way through the desert for 500 miles to terminate in the great marshes called the *Kara Burun* and *Lob Nor*² near the borders of Kansu, in the very heart of the continent.

45. *Climate*.—The great features of the climate of Eastern Turkistan are the extreme dryness of the atmosphere at all seasons, its insignificant rainfall, the dust clouds which frequently obscure its atmosphere, the periodical winds

¹ The Kirghiz name; also called *Tarbagatai*, from the range of mountains that gives its name to the northern division of Zungaria, at the south base of which it lies; called *Sin-ting-ching* by the Chinese.

² The Lob Nor was revisited for the first time since the surveys of the old Jesuit missionaries, by the Russian explorer Prejevalsky in 1877.

of spring and autumn blowing down from the mountains towards the central basin, the intensity of the sun's heat, and the great extremes of temperature from the calm frosty winter to the hot summer.

46. **Towns.**—From the seven cities which lie round the habitable crescent, the country has also been named *Jetyshahr*. In order, from south round to east, these are *Khotan* or *Ilchi*, *Yarkand*, *Yangi-hissar*, *Kashgar*, *Ush Turfan*, *Aksu*, and *Kune Turfan*, the farthest east. Of these, the fortified capital of Kashgar in the extreme west, and Yarkand, the great commercial city of eastern Turkistan, 100 miles south-east of the capital, are the most important. The walls of the latter city form a parallelogram embracing a circuit of about seven miles, entered by five gates; it has not fewer than 160 mosques, and its caravansarais are crowded with merchants from all parts of Asia.

47. **Trade Routes.**—Communication with north-western India is possible by several high and difficult mountain passes, the most frequented of which is that named the *Karakoram Pass* (18,550 ft.), on the route from Leh on the Indus to Ilchi, or to Yarkand; across the high Pamir in the west trade is carried on with the Oxus valley; north-westward the Thian Shan is crossed on a route from Kashgar to Kokan and the valley of the Syr Daria, by the difficult *Terek Pass*, and northward between Aksu and Kulja by the *Muzart Pass*. In the bazaars of Yarkand are seen the silks and teas of China which have come thither by the route through Kansu and along the southern base of the Thian Shan; cloths and sugar, which have come over the north-western passes of the Thian Shan from European Russia; and Manchester goods, which have found their way over the Western Himalaya.

TIBET.

48. The remaining portion of the Chinese Empire is as yet little known, partly owing to the natural difficulties of access to it, partly to the jealousy of the Chinese government respecting the intrusion of foreigners. It embraces the great highland region which is marked out by the high edges of the Kuen-lun and Nan-shan mountains in the north and the Himalaya on the south, reaching westward to the convergence of these ranges on the Pamir plateau, and eastward to where the highland begins to break down on the inner borders of China proper. The area embraced by this vast highland, which appears to have an *average* elevation of about 15,000 feet above the sea, is nearly eight times the extent of Great Britain.

49. **Physical Features.**—The general aspect of the plateau, the northern portion of which has recently been penetrated by a Russian explorer, the southern examined along several lines by "pandits" travelling secretly in the service of the British Indian Government, appears to be that of bare grassy plains or wide basins, often enclosing large sheets of water, sometimes fresh, but most frequently salt, separated and enclosed by ranges of gigantic snow-clad mountains. In the uninhabited portions large herds of wild asses, antelopes, and the great wild sheep,¹ help to relieve the monotony of the landscape; the wealth of the nomadic and thinly scattered inhabitants is in

¹ The *Ovis ammon*, or Argali, long-legged, and standing as high as a calf, with immense horns, "so large that the fox is said to take up his abode in their hollows when detached and bleaching on the barren mountains of Tibet."

their yaks, goats, and sheep, with which they move about from one pasture to another. Winter covers the heights with snow, and seals up the rivers, lakes, and streams in hard enduring frost; very slight summer rains fall in July and August.

50. The north-eastern portion of this region immediately south of the Nan-shan mountains, and adjoining the Chinese province of Kansu on the south-west, surrounds the great lake called the *Kuku-nor*, and is known to the Chinese as *Sing-hai*. This is the land of the *Tangutans*, a race closely allied to the Tibetans. They resemble gypsies in appearance, and live in black tents; they are distinct from the Mongols, and are as far beneath them as the Mongols are below the Chinese; they prefer a nomadic to a settled life, and are chiefly engaged in pastoral pursuits; many of them, however, are notorious robbers. *Kuku-nor*, the "blue lake," fed by streams from the Nan-shan, is about 200 miles in circumference, and lies at an elevation of 10,500 feet above the sea, surrounded by mountains. An island near its south-western shore is inhabited by hermit Lamas, whose only communication with the shore is in winter over the ice, there being no boats on the lake. A great marshy plain called the *Zaidam*, about 150 miles in length, shuts off this district from the rest of Tibet.

51. The great features of Southern Tibet¹ are given by the high valleys of the *San-po*, or Upper Brahmaputra, flowing east, and of the *Indus*, flowing north-west, embracing between them the huge mass of the Himalaya, where they turn south to descend to the plains of India. The valleys of the eastern border of the great plateau, where forest-covered slopes and deep gorges take the place of the grassy plains, also give rise to the great streams of south-eastern Asia—the Irawadi, Salwen, and Mekong of Farther India, and the Yang-tse and Hoang-ho of China. The largest of the series of lakes of Central Tibet with which we are as yet acquainted is that named the *Tengri-nor*, locally called the *Nam-cho*, or "sky lake," from its great altitude (15,190 feet above the sea). This is a splendid sheet of water, about 50 miles in length by 20 in width, shut in on the south by a range of snowy peaks, from which glaciers depend. The *Nam-cho* is a sacred lake, and has several monasteries on its banks and islands, to which pilgrims repair. During the summer half of the year, when it is not frozen over, the *Namcho* overflows north-westward, it is said, to a much larger lake called the *Chargut-cho*, which has not yet been reached by any European. Another remarkable lake is that called the *Palti*, or *Yomdok-cho*, which lies south of the *San-po*, and is ring-like in form, enclosing a large central island. Springs, with temperatures varying from 130° to 180° Fahr., and geysers which eject their hot sulphurous waters, contrasting in the depth of winter with the hard frozen streams, are other natural curiosities of the southern part of the plateau.

52. **People.**—The Tibetans are described as of middle stature, with long dark hair, little beard, small slit-like eyes, high cheek bones, small nose, large mouth, and thin lips; pliant, like the Chinese, but strong, like the Tatars, brave, and generous. It is to the exclusive policy of the Chinese government, not to the Tibetans themselves, that our ignorance of their country is mainly due. Lamaism weaves itself into every concern of life, and its very numerous priests are the true rulers of the land; so much is this the case that the few towns of Tibet are simply great collections of temples and monasteries. The Dalai Lama (or Lama Guru), the spiritual sovereign, at the head of a great hierarchy, has his seat at *Lassa*, which is situated on a level plain north of

¹ Or Tubet; properly *Tu-po*, the land of the Tu, a people who migrated hither in the sixth century: the native name of the country is *Bod-yul* = the land of Bod: the Chinese call it *Si-tsang*.

the San-po, 11,700 feet above the sea. This city, the centre of which is an immense temple, resplendent with gold and gems, has a circuit of two and a half miles. The monastery of Debang, near it, shelters no fewer than 7700 priests. Another great monastic town is that of *Shigatze*, on the southern side of the San-po, about 200 miles south-west of L'assa, the residence of the Tesho or Bogdo Lama, or Pan-chhen, who is theoretically equal in spiritual authority to the Dalai, but is practically his inferior: its monasteries harbour more than 3000 priests. About 500 miles east of L'assa, also, on a tributary valley of the Upper Yang-tse, near the frontier of China Proper, stands the great monastery of *Lithang*, famous for its gold-roofed temple, the residence of about 3500 priests.

53. **Government.**—A Chinese viceroy resides in L'assa, and represents the temporal authority of the Emperor. Chinese garrisons and forts are also maintained at all the important points of the country. Central Tibet is divided into the two provinces of *Yu* (or Wei), which has L'assa for its capital, and *Sang*, in which Shigatze is the chief town. Western Tibet, extending to the state of Ladakh, which is under British protection, is included in the province of *Ari* (or Nari); the eastern region, extending across the gorges of the Upper Yang-tse, next China, is named the province of *Kham*. The interior country northward of the central provinces has the general name of *Hor*.¹

54. **Trade.**—The chief place in the western province of Tibet is *Gartokh*,² in the upper valley of the Indus, a summer camp of about 200 tents, chiefly belonging to traders. A well-maintained high-road extends along the valley of the San-po from L'assa to this point, and by this the Chinese officials keep up communications for 800 miles along the plateau behind the Himalaya, post-houses or *tarjums* being maintained at every stage of 20 to 60 miles. Yak caravans, sometimes numbering 1000 animals, traverse this highway. Near Gartokh are the chief gold-fields of Tibet. The most important is that of *Thok Jalung*, at the great altitude of 16,300 feet above the sea. Here the tents of the diggers in summer number about 300, but in winter, when the soil is more easily worked, their number increases to about 6000. At that season the tents are sunk in pits seven or eight feet beneath the surface, to avoid the strong freezing winds which then blow over the bare highland.

In former times a considerable traffic and intercourse was maintained between Tibet and the plains of India through the difficult passes and gorges of the Himalaya; since the Chinese conquest at the end of last century, the passes are jealously guarded and closed to foreigners. European goods, however, reach Tibet by way of Ladakh in the west and through Nepal;³ and by the same routes, as well as farther east to the fairs of Assam, the Tibetans send down gold dust and salt, musk, yak tails, and ponies.

Besides being the greatest place of pilgrimage in Central Asia, and partly on this account, L'assa is a great trading centre. Here in December merchants from all the surrounding countries congregate: silks, carpets, and porcelain, but especially tea, are brought from China by way of the monastery of *Lithang* and the trading town of *Bathang*, the brick tea being ferried across the Yang-tse and its numerous parallel tributaries in large baskets covered with hides, which float on the water. Musk comes from the country north-east of L'assa; gems and gold lace, sheep and horses, from Turkistan; rice and tobacco, corals, pearls, and spices, from India by way of Sikkim; saffron from Kashmir in the west. The traders leave again in March before the summer rains flood the rivers.

¹ Also *Khor* or *Katchi*.

² Also called *Gar-yar-yarsa*; *yarsa* meaning "summer abode."

³ By the Klong, Nilam-la and Tipta-la (passes).

JAPAN.¹

1. We now come to what is in many respects the most interesting portion of Mongolian Asia, the Empire of Japan, remarkable alike for the proud isolation which it so long maintained, and for the extraordinary advances which it has made since its renewal of intercourse with the civilised world in recent years.

The islands comprising it have already been likened to the British Isles in their position relative to the Continent, the Sea of Japan and the Strait of Corea resembling our North Sea and Strait of Dover. In their general extent of surface the comparison also holds good. The three contiguous islands of Japan proper are not much larger than Great Britain; the northern possession of Yezo is of nearly the same size as Ireland.²

JAPAN PROPER (The Islands of Nipon, Shikoku, Kiushiu).

2. Relief.—The islands are unlike the British group, however, in being for the most part of volcanic origin, forming part of the series of loop-like chains which have risen round the eastern borders of the continent. They are generally mountainous, the numerous ranges which cover their surface extending in directions parallel to the length of the group, giving varied and picturesque landscapes of hill and valley; their irregular coast-line is indented with splendid natural harbours, such as the *Bay of Yedo* on the south-east coast; the beautiful “*inland sea*” of Japan, with its intricate channel between hundreds of islets, separates the island of Shikoku from the larger one of Nipon, and the enclosed *Suwo nada* and *Bugo Channel*, divide the south-western island of Kiushiu from both of these. Many of the mountains attain heights of from 3000 to 8000 feet; but two of the most prominent of all are the now extinct volcanic cone of *Fusi Yama*, 14,177 feet, which rises snow-capped west of the capital, and which is said to be one of the youngest mountains of the world, having risen in the course of a few days about three centuries before the Christian era; and the smoking *Asama-yama*, near the centre of the island of Nipon.

3. Rivers.—From the mountainous character of the long narrow islands the rivers are generally impetuous, and of small economical importance, except

	Area in square miles.	Population (1880).
1 Islands of Japan proper (Nipon, Shikoku, Kiushiu, etc.)	109,765	35,451,240
Yezo, or Hokkaido, and small neighbouring islands	30,280	310,500
Kurile Islands (Kunashir, Iturup, etc.)	5,725	
Liu-kiu, or Lu-chu Islands	808	163,400
Bonin Islands	32	160
Japanese Empire	146,610	35,925,300

² The Japanese call their country Dai-nipon, or Great Nipon, the latter word being formed from *nitsu*, “the sun,” and *pon*, “origin,” so that Nipon means the land of the “rising sun,” or the east. The Chinese sign meaning the “sun rising,” is pronounced Ji-pon, or Ji-pan. The name Nipon thus becomes Ji-pan in the Cantonese dialect, with which European merchants became first familiar. Hence the name Japan. The addition of *Koe* = kingdom, gives Ji-pan-koe, the original of the name Zipango, by which the country was first known in the middle ages.

for irrigation, and they do not exceed the average of our British streams in size. Among the most important may be noted the *Yodo-gawa*, which flows from the fiddle-shaped *Lake Biwa*, the largest fresh-water expanse in Japan, 35 miles long, to the "inland sea;" the broad and rapid *Ten-ri-o-gawa*, or "river of the heavenly dragon," which flows south from the central mountains of Nipon; and the *Tone-gawa*, which reaches the Bay of Yedo, and which is crossed within the capital by the *Nipon Bassi*, or bridge of Japan, from which, as a starting-point, all distances throughout the kingdom are measured.

4. *Climate*.—Though the islands of Japan lie more than ten degrees farther south than our islands, their average temperature is scarcely higher, and the climate, as a whole, may be compared with that of South Britain. The extremes, however, are greater, summer being hotter, and winter colder than in England, increasing to almost Siberian rigour in the north. June, July, and August form the *Satsuki*, or rainiest period; the autumn succeeding is the pleasantest and most genial season of the year. Hurricanes, storms, and fogs, are frequent in the seas round Japan, where warm and cold ocean currents also bring about great differences of sea temperature.

5. *Products*.—The islands have a very beautiful flora, to which our European gardens are indebted for many of their most ornamental plants. The great feature of the vegetation is the intermixture in it of tropical growths, such as the bamboo, palms, tree-ferns, and bananas, with those of temperate regions, the pine, oak, beech, chestnut and maple. Characteristic are the paper mulberry, the vegetable wax tree, the camphor and lacquer trees. The cultivated crops are of rice, maize, wheat, barley, tobacco, tea, and cotton.

Japan is also very rich in minerals. Gold, silver, and copper are especially abundant in the north, and coal and iron beds seem to extend throughout the group.

The animals of Japan resemble those of China. Cattle and horses are used as beasts of burden; swine are reared to be sent to China; dogs and cats, bees and silkworms, are met with in all parts, and the seas yield abundance of fish. In consequence of the dense population, and the almost universal cultivation of the soil, wild animals scarcely exist in Japan.

6. *People*.—The population of the islands of Japan proper is considerably denser than that of Britain. The complexion of the people varies from a yellow brown to white among the upper classes; the eyes are lengthened, narrow, slightly oblique and deep-set, generally brown or black; the hair black and thick. Though proud and vindictive, the Japanese are described as friendly and good-humoured, industrious and intelligent, manly and polite. Their language, which occurs in many dialects, is related to those of Manchuria and Mongolia on the continent, and many Chinese words have also become incorporated with it. The native literature is abundant and various, but the whole circle of Chinese Confucian literature has also been adopted. The philosophy of Confucius is held by the literati of Japan, but the mass of the people are divided between the ancient *Shintuism*, in which the great Sun goddess is worshipped, and *Buddhism*, which was introduced in the sixth century A.D. In education, as well as in matters of religion, enormous changes and advances have been made in recent years.

7. *Industries*.—Agriculture is the chief occupation of the Japanese, and they are excellent and careful farmers. In the mechanical arts also they excel, especially in the use of metals; in the manufacture of porcelain and glass-lacquered wares, and silk fabrics. As early as the seventh century they knew how to make paper, and they employ it for an immense variety of purposes, and have long understood printing from types, and in colours. They have even advanced to engineering, trigonometry, and astronomy. They possess good

native maps of their country, and their almanacs foretell the appearances of eclipses of the sun and moon.

After the expulsion of the Portuguese, navigation and communication with the outer world ceased for several centuries, though the Japanese had previously been accustomed to sail in their ships to the Corea and China, and even to Java. Now, the advance they have made in this respect may be best realised from the fact that in 1878 a Japanese-built iron-clad war vessel, navigated by Japanese officers, made a voyage to England by way of Singapore, Aden, and the Suez Canal.

8. **Government.**—In former years there were two Emperors of Japan, the *Mikado*, or spiritual ruler, the descendant of a long line of kings, and the *Sho-oon*,¹ or executive chief, the one reigning but not governing, the other governing but not reigning. The *Daimios*, or territorial princes of Japan, also ruled the provinces with despotic authority, and were almost independent of the Government. A great revolution has, however, taken place since the reopening of the country to western influences. After a short war in 1869, the now ruling sovereign overthrew the power of the daimios, reducing them to the position of simple tenants of their vast hereditary possessions, and the Government was centralised and remodelled on a partly European basis. The Mikado remains theoretically an absolute monarch, but the work of administration is carried on by a great council, over which he presides.

These changes necessitated also a redivision of the country for administrative purposes. The old extensive divisions and provinces, named from the great highways which passed through them, were broken up into seventy-two² *ken*, or departments, similar to those of France, each being placed under a governor or prefect. In lieu of the bands of followers maintained by each of the daimios, the army of Japan now forms one body of imperial troops.

9. **Trade.**—Within the country there is a system of excellent Government highroads, the milestones along which are numbered from the bridge in the capital city of Yedo or Tokio. Railways have also been introduced in recent years, the first line from Hiogo to Osaka having been opened for traffic in 1875; and telegraphs connect the chief ports with the Asiatic lines. By treaties concluded since 1854 at various times, the ports of *Yokohama* (Kanagawa), on the Bay of Yedo; *Nagasaki*, on the west coast of Kiushiu; *Hiogo* and *Osaka*, on the "Inland Sea;" *Hakodate*, on the southern extremity of Yezo, in the north; and the city of *Yedo* or *Tokio* itself, were opened to foreign commerce. As yet the greater number of the interior departments of the country are closed to foreigners.

Niigata, on the north-west coast of Nipon, is also an open port, but its harbour is of little value; and *Shimoda*, 84 miles south-west of Yedo, opened to American trade in 1854, has also proved useless.

The trade of Japan is carried on mainly with Great Britain and the United States of America, the great article of export to our country being *silk*, the chief imports from it *cotton* and *woollen* goods. By far the larger proportion of this trade is carried on at the port of *Yokohama*, on the west side of the Bay of Yedo, which has taken the place of Kanagawa, since that place, near it, was found to be difficult of access.

10. The temporal capital of Japan, and its most extensive city, is the wood-built town of *Yedo* or *Tokio* (594,000), spreading over a large area in a broad valley at the head of the Gulf of Yedo. Till recently the sacred Mikado shut himself up mysteriously in his palace at *Miako* or *Kioto* (230,000), an island city near Lake Biwa, about 200 miles west of Tokio. This is the court town,

¹ Called by the Chinese *Tycoon* or Great Prince.

² Reduced in 1876 to sixty-four *ken*.

the seat of the literature and science of Japan. *Osaka* (284,000), south-west of it, on a land-locked bay of the Inland Sea, has been called the "Venice of Japan," from its many canals and bridges, and is the favourite resort of the fashionable, possessing sumptuous tea-houses, gardens, and theatres. *Hiogo* is the port of *Osaka*, and of *Kioto*.

Shimonoseki, at the western narrows of the strait between *Nipon* and *Kiu-shiu*, is a strongly-fortified native port, closed to foreigners, and is considered the key to the Inland Sea of Japan.

YEZO.

11. The northern island of *Yezo*, which we have compared to *Ireland* in extent, is not considered as an integral part of Japan, but rather as a dependency or colony, towards which the attention of the Government was directed after the Russians began to extend their dominion over the neighbouring shores of the continent.

It is in general mountainous and covered with forests similar in kind to those of the south of *Scotland*—beech, ash, and pine, besides elm and maple, and dwarf bamboo. Like the other islands of this chain, it is volcanic, and the bay formed by its southern peninsula, next *Nipon*, is named *Volcano Bay*, from the three fine volcanoes on its shores, two of which are in active eruption. The *Ishikari*, flowing south-west, is the chief river of *Yezo*.

The island appears to have great natural wealth of gold, silver, iron, petroleum, and coal; but its capabilities are undeveloped, roads and communications being deficient as yet.

12. A warm ocean current sets from the south up the western side of the island, while a cold stream from the *Sea of Okhotsk* flows along the eastern shores. Thus the western borders enjoy a more favourable climate, the eastern being often cold and foggy.

The Japanese colonists do not form more than about a fifth of the population, and live in villages along the southern coasts. Most of them engage in the productive fisheries (salmon and herring), and in gathering large quantities of seaweed and sea slugs (*urico*) for home consumption and export to *China*, and return to their homes on the main island when the season is over. All the interior is inhabited by the *Ainos*, a race which seems to have a wholly different origin from the Mongolian stock. While these have beardless faces and oblique eyes, the *Ainos* are distinguished by a profusion of black hair, which mingles with the thick beards that fall almost to their waists, and their eyes are large and round. These barbarians make garments from bark, and are employed in the chase or in fishing.

13. *Hakodate*, the most northerly port open to foreign trade, is situated on the southern peninsula of the island of *Yezo*, on a bay of the strait of *Sugaru*, which separates it from the northern coast of *Nipon*. It is the great resort of the whaling ships of these seas. *Matsumaye*, forty miles south-west of it, is, however, the chief centre of population in the island. *Satsuporo*, on the west near the coast, is a settlement formed under American superintendence, with the object of utilising the great wealth of timber in the forests of *Yezo*.

KURILE ISLANDS.

(JAPANESE CHI-SIMA).

14. The Japanese had also settled on some parts of the southern Kurile Islands, the volcanic chain which reaches from Yezo north-eastward to the southern cape of Kamtchatka, and the south of the island of Saghalien. In 1876 the Russian Government, desiring the complete possession of the latter island, effected an exchange with Japan, giving to it the northern Kuriles for southern Saghalien; and the few hundreds of Japanese who had settled there abandoned it in favour of the Russians.

The Kurile chain, in which *Yeterop* or *Iturup*, *Urup*, *Simusir*, *Onkotan*, and *Paramusir*, are the chief islands, is, like Yezo, mountainous and wooded, and inhabited by Ainos, who maintain themselves by hunting and fishing, the products of which they barter with Russian, American, and Japanese traders.

LIU-KIU ISLANDS.

On the opposite side of Japan from the Kurile chain another long archipelago reaches southward in a curve towards Formosa. This chain, called the *Liu-kiu* by the Japanese and *Lu-chu* by the Chinese, has been tributary to Japan for more than seven centuries. Since 1872, however, their native sovereign has been reduced to the rank of a Governor of the islands as a province of Japan.

15. The chain forms four distinct groups—(1) Round the larger islands of *Tanega* and *Jokuno* on the north; (2) the *Sanbok* Islands or *Liu-kiu* proper; (3) the *Siu-san* or middle group; (4) the *San-nan* or southern islands, nearest to Formosa. The Great *Liu-kiu* island in the middle group may be compared in size to the Isle of Man. They are hilly throughout (*Jokuno* Island rises to 6345 feet), have a delightful climate, fertile soil, and varied landscape, with vegetation partly tropical. Birds are abundant, but there are no native quadrupeds, though large numbers of cattle are kept.

16. The inhabitants are of the same race as the Japanese, low in stature, courteous, and advanced in arts. Buddhism is the prevailing religion.

Siuli or *Shiuri*, on the great *Liu-kiu*, is the capital of the province; and *Nawa*, south of it, is the port which is open to foreign commerce.

17. Japanese Colony in Corea.—In 1876 the Japanese Government concluded a treaty with long-closed Corea, by which closer relations were established. It was stipulated in this agreement that Corea should henceforth be considered a free and independent state by Japan, and that the ancient nominal tribute should cease; that the Japanese and Corean Governments would send ambassadors to each other's capital; that trade should be permitted between Japan and Corea at two ports to be named, and at which Japanese consuls should reside; and that the Japanese navy should have permission to survey the dangerous coasts of Corea. The Japanese have had a trading settlement for about 150 years at *Fushan*, on the south coast of Corea; and this was formally made an "open port" to their vessels by the treaty of 1876. A number of merchant vessels now visit it, and a Japanese steamer runs once a month to Corea. By an arrangement effected in 1879 two more Corean ports have been opened to Japanese trade.

18. *Bonin Islands*.—As another evidence of the recently awakened activity of the Japanese, may be noted their re-assumption (in 1876) of the control of the little group of the *Bonin Islands* out in the Pacific, which they used as a penal station in the seventeenth century. The islet named *Peel* is the only inhabited one, and is visited chiefly by American whalers at the harbour of Port Lloyd.

INDIAN ASIA.

INDIA.

We all know how the great central promontory of Southern Asia has been the object of desire to conquering peoples,¹ during all the period over which history reaches, and how, from the time when Queen Elizabeth granted an exclusive charter to certain merchants of London, trading to a few isolated factories on its coasts, the country has been passing more and more completely under our rule, till it has become "the pearl of the British crown."

1. On beginning to study its geography a little more particularly, the first point about which we must endeavour to obtain a clear conception is that of its great extent. From the line of the Himalaya southward to its extreme cape on the Indian Ocean, India occupies a space more than *fifteen* times as large as our island of Britain; a journey across it from north to south, or from east to west, would require half a year if one travelled ten miles every day. The Himalaya are as distant from Cape Comorin as Iceland is from Spain.

2. The natural landward boundaries of this vast region are the range of the *Himalaya* on the north, forming the steep southern edge of the plateau of Tibet; on the north-west the *Sulaiman* mountains, the edge of the plateau of Afghanistan and Baluchistan, where it descends to the plains of the Indus; and on the east the heights of southern Assam, dividing the drainage to the Brahmaputra from that of the valley of the Irawadi in Burma. From the mouths of the Indus on the west, and of the Brahmaputra and Ganges on the east, the south-west coast² next the Arabian Sea, and the south-east³ shores of the Gulf of Bengal inclining towards the same point, meet at Cape Comorin. The landward and seaward borders have each nearly the same length of about 3000 miles, so that India is half a maritime, half a continental country. It is remarkable also that just as the approaches to India from all parts of inner Asia must be made by descending difficult mountain passes, so its straight surf-beaten coasts, notwithstanding their length, are deficient in good harbours, and often dangerous to those attempting to land on them.

3. *Relief*.—The most prominent feature in the relief of India is the great range of snowy peaks named the *Himalaya*, or "abode of snow," which rises on

¹ To the Hindus themselves, the Macedonians, Pathans, Mongols, and Portuguese.

² Or *Malabar* coast, from the southern maritime district of that name.

³ Named the *Coromandel* coast in the south, from an ancient kingdom; the *Golconda* coast between the mouths of the Krishna and Mahanadi; and the *Orissa* coast beyond to the Ganges.

the edge of the Tibetan plateau, above the northern plains, stretching out in a continuous chain for nearly 1800 miles. The mean height of this portion of the borders of the Tibetan plateau, defined very clearly by the channels of the Indus and the Brahmaputra, is estimated at 20,000 feet; the mean breadth of its base is about 150 miles. Its summits rise to 29,000¹ feet, and most of the difficult passes ascending from the valleys and gorges of the Indian side are not lower than about 16,000 feet. In front of the ascent there are subordinate or sub-Himalayan ranges, and between the last of these and the plains of India there extends a broad strip of marshy land called the *Terai*, covered with forest and jungle, crowded with wild animals, though so malarious as to prevent its being inhabited by man. On the north-west the *Sulaiman* mountains present a steep and forest-covered face, and reach up to an elevation of 11,300 feet in their summit called the *Takht-i-Sulaiman*. Near the north-west angle of the Panjab, where these mountains approach nearest to the Himalaya, a group of hills called the *Salt Range* runs eastward from the northern extremity; it has received this (English) name because where the Indus river breaks through it by a deep channel, beds of pure salt are exposed to view.

4. Southward from the bases of the Himalaya and the Sulaiman mountains the *Great Plain of Northern India* spreads out, reaching across the whole breadth of Hindustan from the Arabian Sea to the Gulf of Bengal. Its western region has generally a dry and bare character, with a soil of clay and sand almost without stones. Here are the fine steppe-like *doabs* of the Panjab, between the fertile borders of the rivers, affording boundless grazing ground for camels, cattle, buffaloes, sheep, and goats; farther south the great Indian desert or *Thar*, covered with a succession of wave-like sandy ridges, occupies the greater part of Rajputana; beyond this, about the lower Indus, come the dusty plains of Sind, and, on the coast, the strange tract of country called the *Rann of Kachh*, a level plain 150 miles in length, in which vegetation is totally absent; it forms during the greater part of the year a firm level plain of earth, saturated with salt, on which the troops of horses and camels in passing make scarcely any impression. So devoid of all landmarks is it that travellers and caravans are sometimes lost. During the south-west monsoon, however, high tides flow over it, and cover it with water to the depth of one to two feet. The eastern wing of the great plain watered by the Ganges and Brahmaputra and their many tributaries, is unlike the western, in having everywhere a richly fertile alluvial soil, in being everywhere highly cultivated, yielding great crops of sugar-cane, cotton and indigo, rice and wheat, opium, tobacco, and hemp, and supporting a dense population. At the head of the Gulf of Bengal this wing of the plain terminates in the great group of marshy islands called the *Sundarbans*, which forms the vast delta of the Ganges. These are separated by a multitude of narrow channels of brackish and salt water, and all are overgrown by low woods and jungle, sheltering tigers, wild buffaloes, wild swine, deer, and monkeys.

5. Southward of the great plain the land begins to rise again. The first elevations reached in this direction are those of the long range of the *Aravali* hills, which extends for 400 miles from north-east to south-west, marking the edge of the western section of the great plain. It is bold and precipitous on that side which falls towards the Indian desert, but less so on the south-east; its average height is about 3000 feet, Mount Abu, its summit, being 3850 feet. A prolongation of it south-westward forms the *Peninsula of Gujrat*, which projects into the Arabian Sea between the Rann of Kachh and the Gulf of Cambay.

¹ Deodhunga or Mount Everest, 29,002 feet; K. 2, in the west, 28,865 feet; *Kanchanjanga*, 28,166 feet; *Dhaulagiri*, 26,826 feet; *Chumalari*, 23,944 feet.

Behind the Aravali hills lie the *Plateaus of Malwa and Bundelkhand*, extending over the country generally termed Central India; these are fertile table-lands of uneven surface elevated from 1500 to 2000 feet above the sea-level, and traversed by a number of minor hill ridges. Their southern border is marked by the range of the *Vindhya* mountains, which runs north-eastward from near the head of the Gulf of Cambay for more than 500 miles to near the Ganges in its middle course. It does not rise much higher than the plateau behind it, the highest points being about 2300 feet above the sea, but it descends by rugged slopes to the valley of the *Narbada* flowing along its southern base. Beyond this valley, running parallel to the *Vindhya* for about 200 miles, is another east and west range named the *Satpura* hills, the highest summits of which attain about 2000 feet. This range has a gentle ascent from the *Narbada*, but its southern scarp towards the *Tapti* river is abrupt.

6. The greater part of India south of the *Satpura* is occupied by the wide table-land of the *Deccan*.¹ The name *ghat* or *ghaut*² was originally applied by the natives to the passes in the outer slopes of the ranges, which run parallel with the two coasts of the southern portion of the great promontory of India enclosing the *Deccan*, and which had to be ascended to reach the high interior country from the coast; but from this the name has been transferred to these ranges or outer edges of the table-land themselves.

The *Western Ghats*, about 800 miles in length, clothed with magnificent teak forests, form by far the boldest and most continuous escarpment of the *Deccan* plateau, ascending abruptly from a low base generally at a distance of about 30 miles from the sea; beginning with a height of about 2000 feet immediately south of the *Tapti* river, their elevation increases southward to 4700 feet at the sanitarium of *Mahabaleshwar* south of *Bombay*, and attains a maximum of nearly 7000 feet, with grand and rugged outline, and precipitous granite peaks, in the south; there they unite with the group of the *Nilgiri hills*, the central portion of which culminates in *Mount Dodabetta*, 8760 feet above the sea. The *Eastern Ghats* differ from the western in being much lower, in rising at a much greater distance from the coast of the Bay of Bengal, and with a gentle slope, giving access by wide openings to the interior. Their average height is about 1500, the highest point, near *Madras*, only about 3000 feet, above the sea. The *Deccan* plateau between these supporting buttresses has thus a gradual eastward slope, and is characterised by undulating treeless plains, ridges and isolated flat-topped hills capped with basalt; large portions of it are also covered with jungle, often overgrowing the ruins of former towns and temples, but there is no extent of forest; where cultivated it yields cotton, wheat, and oil seeds in abundance, and the date palm and palmyra are found everywhere.

7. Between the *Eastern Ghats* and the sea lies the extensive maritime plain generally named the *Carnatic*,³ reaching back from the *Coromandel* coast for about 50 miles. The soil of this plain proves abundantly fertile when it is watered, but there are few streams, and a supply of water for irrigation has to be stored in reservoirs against the dry season. On the south this plain, turning the base of the *Eastern Ghats*, leads into the remarkable *Gap of Coimbatore*, a low passage between the west and east coasts, through which a railway has been carried uniting *Madras* with *Beypur*. Northward of this river the *Nilgiri* mountains rise like a vast precipice; southward the *Anamalli* mountains also ascend abruptly from the valley to the highest known summit of all

¹ Sanscrit, *Dakshina* = "the south."

² *Ghat*, a landing place, ford, or pass.

³ From the ancient Hindu kingdom "*Carnata*," in which the *Canara* language was spoken. This was the great theatre of the contests between France and Britain for supremacy in India.

south India, 8835 feet above the sea. From this a range of high wooded heights sometimes called the *Cardamom* mountains, from the aromatic pungent spice yielded by their forests, extends southward for 180 miles to terminate in a bold headland a little above Cape Comorin.

8. *Rivers*.—The grand rivers of the system of northern India—the *Ganges* and *Indus* descending from the Himalaya to water the great plain—have already been noticed in the general description of the continent.¹ It may give an idea of the value of the Ganges and its navigable tributaries if it is noticed that not fewer than 300,000 boatmen are believed to be occupied in its busy traffic. Large sea-going ships ascend it by the *Hugli* mouth to Chandranagar, above Calcutta; steamers of light draught go up to Cawnpur, and thence a canal of 350 miles in length overcomes the difficulties of navigation upward to Hardwar, 1300 miles from the sea, where the river issues from the sub-Himalayan ranges. Its great tributary the *Jumna* is navigable up to the ancient city of Dehli, and, by canals which it supplies, for 200 miles beyond that point. The fluctuations and changes, both in its channels and in the size of these at different times of the year, are very great; at Benares, for example, the depth of the Ganges varies between 35 and 78 feet, and its breadth in like proportion; the rising begins in the end of May, and is at its height in September. In July all lower Bengal near the rivers is inundated, so that the villages protected by embankments appear like islets in the wide expanse of waters dotted with craft of every sort.

9. These great northern rivers are supplied by both the melting snows of the Himalayas and by the rains carried to the mountain face by the south-west monsoon during the summer half of the year. Thus from the melting snows they begin to rise early in spring, and their depth is kept up by the succeeding rains. The rivers which rise on the highlands of the southern or peninsular portion of India, are, however, dependent on the monsoon rains alone, and thus show greater but less enduring fluctuations of level during the year. The two rivers which drain westward to the Gulf of Cambay between the Malwa plateau and the northern edge of the Deccan, are the *Narbada* and the *Tapti*; the former, rising in the highest land of Central India, has a westerly course of 750 miles, flowing with rapidity over basalt rocks which at intervals bar its passage, forming deep pools and waterfalls. It is thus of no considerable value for navigation, and when it is swollen by the monsoon rains its current descends with devastating velocity, carrying with it uprooted tree trunks and other debris. The *Tapti*, separated from the former by the Satpura range, has a similarly rocky bed and rapid fall, and is likewise subject to sudden and tremendous floods, after which it subsides into a mere chain of pools.

10. The eastern drainage of southern India to the Gulf of Bengal has more important streams. Nearest of these to the Ganges is the *Mahanadi*² drawing its tributaries from the heights of central India, navigable by boats for nearly 400 miles during the greater part of the year, but notorious for its destructive floods. It passes the line of the Eastern Ghats by a fine gorge 40 miles in length, and thence flows quiet and deep to spread itself out in the wide delta by which it emerges into the gulf.

Next southward is the *Godavari*, the greatest river of the Deccan, rising at Nasik on the eastern slope of the Western Ghats, not very far from Bombay, and flowing east for 900 miles. Reaching the line of the Eastern Ghats, it is imprisoned for some twenty miles in a gorge, the scenery of which has been justly compared with that of the Rhine: here it flows in a narrow deep channel with a current that sometimes lashes itself into boiling whirlpools. Escaping from this, the water spreads over the plain, and is dotted with islands,

¹ See p. 186.

² "Great river."

many of which are ornamented by Hindu temples. Finally, it forms one great stream between flat and highly cultivated banks, from which a network of irrigating and navigable canals is drawn off, before breaking into the numerous channels of the large delta that it has pushed out into the sea.

Like the Godavari, its neighbour river the *Krishna* rises in the inward slope of the Western Ghats, and descends the eastern edge of the plateau by a deep channel to reach the alluvial plains of the Coromandel coast. Its course of 800 miles affords scarcely any navigation, but some of its tributaries, passing through fine teak forests, are utilised for rafting down the valuable timber. The *Panar*, *Palar*, and the *Kaveri*, are the other considerable rivers of this slope. The last-named has its head stream in the highest part of the Western Ghats north of the Nilgiri hills, and descends from the table-land to the eastern plain by two great falls, the upper 370, the lower 460 feet, in the midst of magnificent scenery. In the plain it is navigable for small craft during the rainy season, and is peculiarly adapted for irrigation. Its great delta, enclosed by two main branches, called the *Coleroon* (the larger) and the *Kaveri* or *Cauveri*, extends along the coast opposite the northern extremity of Ceylon for 80 miles.

11. *Climate*.—The stages of climate and vegetation which succeed one another in ascending up to the snows of the Himalaya have been already noticed.¹ In the plains at their base, as in all the rest of India, a hot, a rainy, and a cool season of the year, are distinguished. Spring and the dry season last for four months in the Ganges valley, till in May and June the heat becomes intolerable, rising to over 100° F., long before which the great fan, called the *punkah*, must be set going in every house. The terrible heat is interrupted occasionally by thunderstorms from the north-west, which refresh the drooping vegetation. As soon as the southern regions of the continent have thus become heated under the northing sun, the *monsoon* winds are drawn in from the south-west. These begin to be felt in south India in June, and reach the northern plain somewhat later. Masses of cloud are seen coming up from the Indian Ocean, becoming denser as they near the land, over which they pass with strong gusts of wind, followed by incessant thunder-claps; lastly, the heavy rushing rain begins to be heard. Dull days of incessant rain now set in, till the streams and rivers swell into torrents; then follows a pleasant pause, during which the sky is dappled with clouds and all the fields show fresh green herbage; for a time the rains fall only now and then, but, renewing their strength, the downpour reaches its maximum in July, gradually decreasing thence onward till September, when the south-west monsoon ceases and retires before its opponent wind from the north-east, going out as it came, with a storm of thunder and lightning. The *north-east monsoon*, which would perhaps be more accurately termed the north-east trade-wind, now prevails, bringing with it dry cold air from the height of central Asia, giving the cool season, during which the thermometer marks an average of 65° to 70° F. over all the northern plains and the west coast of Peninsular India. This lasts from November till the middle of February, when the heat and drought again begin to be oppressive. The north-east monsoon is not, however, a dry wind in all parts of India. On the Coromandel coast, about Madras, which it reaches after passing over the wide Gulf of Bengal, gathering vapour from it, it corresponds to the south-west winds of the western side of the promontory, bringing rain to this coast from October till the end of December.

Thus two great periods, a wet and a dry, divide the year in almost all parts of India, and it is for this reason that the storage of water for irrigation and against the dry season becomes of such vital importance to the agriculture and to

¹ See pp. 184, 185.

the subsistence of the people of India. Hence the multitude of irrigation canals and reservoirs (tanks formed by *bunds* or dams) which have been constructed over the whole land.

The quantity of rain received by different parts of the land is very various and fluctuating; thus the wall of the Western Ghats, rearing itself up in opposition to the direction of the south-west monsoon, is deluged with rain, while the east coast receives hardly any from this direction, and at times its expected supplies fail altogether, the immediate result being a famine from the corresponding failure of the crops. The great Indian desert is almost rainless.

12. *Products*.—The variety and numbers of the vegetable products of India are so great that we can only note a few of them. The forests of the southern mountains of India along the Western and Eastern Ghats, and the lower slopes of the Himalaya, are rich in timber woods, especially the durable *teak*. The *sal* valued for its timber, and the *bamboo*, grow abundantly, especially along the base of the great northern range; higher up are inexhaustible forests of the chestnut, maple, walnut, oak, and the graceful *deodar*. The spreading *banyan* or Indian fig, and the shady *mango*, are found near every village, the branches of the former being covered usually with monkeys, birds, and enormous bats; the *banana* and the *sugar-cane* flourish under cultivation in all parts; the finest scented *sandal-wood* grows in Mysor; the *palmyra*, the *date-palm*, and *areca* or betel palm, are the commonest of their tribe; the *bread-fruit* flourishes on the coast of Malabar.

Rice, *millet*, *maize*, and *wheat*, are the great grain crops; *indigo*, *opium*, *tobacco*, *oil seeds*, *flax*, and *hemp*, are cultivated for export; *pepper* and *cardamoms* are natural products of the west coast; the cultivation of *tea* in north-eastern India is rapidly increasing; *coffee* is largely grown in the Nilgiris. Innumerable sweet-scented flowers deck the fields and gardens.

13. The animal world of India is not less interesting. In some of the jungles the *elephant* lives free, and, when domesticated, is the most patient and docile of creatures; the *camel* or *dromedary* and *wild ass* belong to the dry region of the north-west; the *rhinoceros* and *buffalo*, *tigers*, *bears*, *wolves*, *wild boars*, and *monkeys*, inhabit the forests and jungles; the *lion* is now limited to the north-west, appearing only in Rajputana and Gujrat. *Deer* of many species, as well as the *bison* and *nilgai*, are abundant in the hills and forests. The *yak* inhabits the heights of the Himalaya; the *goat* is the characteristic animal of the high valleys beyond Kashmir; the *humped ox* abounds in the plains. The *birds* of India, except the peacock, are less brilliant in plumage than those of many other parts of the tropics; parrots, vultures, cranes, flamingoes, and pheasants, are the commonest. *Crocodiles* infest the river channels, and *sharks* lie in wait at their mouths; *serpents*, large and small, are very numerous, the most dreaded being that called by the Portuguese the cobra di capello, or "hooded snake."

14. Almost all the metals and minerals are represented in India, but of the useful metals, excepting iron, the quantity is not known to be large. Coal exists in many parts, especially in the north-east—at Bardwan, near Calcutta, and in Assam. *Gold* is found in Mysor, and in the sands of many streams; *copper* near Dehli and elsewhere; *salt* is obtained in large quantity from the mines in the north-west of the Panjab, and by evaporation from the coast-lagoons all round India, and from salt-lakes in Rajputana; most of the precious *gems*, including diamonds, rubies, sapphires, and emeralds, are found, some abundantly, some rarely, though the supply of the once famous diamonds of Golconda¹ seems to have ceased.

¹ The diamonds obtained in the mines in various parts of the Nizam's dominion were only cut and polished at Golconda, near Haidarabad.

15. **Peoples.**—The broad division of the peoples of India, into a northern group of aryanised nations, occupying the great plains and the northern seaboard on each side, and the unaryanised inhabitants of the Deccan plateau in southern India, has already been indicated.¹ This division also corresponds to that of the languages of India, separating those related to the Sanscrit, the language of the Aryan conquerors of the north, from the Dravidian of the south.

Between these there occur rude native tribes, of which the *Bheels* and *Gonds* are the most important, occupying the Vindhya mountains, the Malwa plateau, and the peninsula of Gujrat, which can neither be classed with one nor other of the above great groups, and who are thought to be the original inhabitants of central India; within the larger groups more than sixty distinct nationalities are recognised. To the aryanised group belong the *Bengali* and the *Assamese* in the north-east; the *Hindus* proper of the Ganges plain and the vigorous *Rajput* tribes dominant in the north-west, the dark and forbidding *Jats*, also of the north-west, the sect of the *Sikhs* in the Panjab (the best cavalry soldiers in Asia), the *Mahrattas*, north-west of the Deccan, and the *Konkanese*, along the coast south of Bombay. In the southern or Deccan group of peoples the most prominent are the *Tamilians*, whose language is spoken all over the lowland of the Carnatic; the *Telugu*, northward of the former, and the *Tuluva*, the original inhabitants of Kanara, beneath the Western Ghats.

16. Amidst such a variety of peoples, every stage, from the oldest and highest oriental civilisation down to barbarism, nearly approaching the lowest forms of savage life, is represented. The Bengali, though intellectually perhaps highest and most advanced in the arts, are weak and cringing; in contrast to these the mountaineers of the north-west are manly and energetic, the Mahrattas bold and industrious, the Gonds cruel and revengeful barbarians, resembling the African negroes, armed still with bows and arrows. In those parts of India which have passed directly under British rule, great efforts have been made to establish a national system of secular education, and to bring this within the reach of the lower classes. A sum of nearly a million pounds sterling is annually devoted to this end. There are well-appointed universities in Calcutta, Madras, and Bombay, and to these about seventy colleges in different parts of India are affiliated.

17. **Industries.**—Agriculture employs by far the larger proportion of the people of India; but the Hindu is not a skilled cultivator like the Chinese; he is almost always extremely poor; his rude plough is drawn by oxen or by buffaloes; the harvest is reaped with the sickle. Rice is the most extensive crop, and gives two harvests, one in August, another in December. Cotton is native of all parts of India, and large areas in the upper Ganges valley are occupied by its crop, and *jute*, formerly used only for the "gunny bags," in which almost all other products of India are packed for shipment, is now grown largely for export, to be manufactured into carpets in Europe; *silk* is also an important product of the Ganges valley.

The textile manufactures of India were famous in long past centuries throughout the civilised world; such were the gold brocades of Dehli, brought thence to imperial Rome, the muslins of Dacca, made for the Mongol Court, and the pattern-coloured cloths of Kalikot (calico), the shawls of Kashmir, and the silks and carpets of Multan. All these home-made fabrics, however, have declined before the products of the great factories at home, which are now

¹ See p. 192.

largely introduced into the country. In Indian architecture, also, it is remarkable that the oldest examples are the finest.

18. **Trade.**—The internal trade of India is very large, and is now facilitated by over 9000 miles of railway. Between Bengal and the western countries grain is exchanged for salt and other products; the pilgrims streaming to the holy city of Benares, and to the great fair of Hardwar from all parts of India, give occasion for extensive commerce, exchanging the diamonds from the south for shawls from the north. In the north-west corner of the Panjab, at the bridge of Attock over the Indus, and at Peshawar, the trade routes from all parts of India—road and rail from Calcutta, the navigation of the Indus from Bombay, and the route from Central India—converge to pass to Kabul and Persia, and northward to Bokhara. By these lines the English cotton cloths, crockery, and hardwares, indigo, sugar, spices, tea, and pearls, pass northward towards Turkistan; northward by Leh and the Karakoram Pass trade communications are maintained with Yarkand: and, by the difficult Himalayan passes, with Tibet. As yet no direct trade route exists between Assam and China on the north-east. By sea in the south a busy coasting trade is maintained; corn, sugar, oil, silk, and many other products of Bengal, are exchanged for the products of the Coromandel coast, for the sandalwood and pepper of Malabar, and for the teak timber of Bombay. The exports from India to Britain have now reached an annual value of upwards of £30,000,000, the staple articles brought home thence being raw cotton, jute, rice, linseed, flax, tea, and hides, for which cotton manufactured goods and iron wares are returned. A great traffic is also maintained with Ceylon, the Straits Settlement, and Singapore, and with China, in which country the greater part of the opium grown in Bengal finds a market.

19. **Government.**—In a political point of view India consists of—(1) Territories under the immediate government of Great Britain, occupying about two-thirds of its area; (2) States under the rule of native princes subordinate in their general policy to British direction; (3) of a few independent native states, lying chiefly along the slope of the Himalaya; and (4) of a few small possessions remaining to France and Portugal.¹

¹ GENERAL VIEW OF THE DIVISIONS OF INDIA.

A. BRITISH INDIA.

I. BENGAL.		Area in sq. m.	Population.
1. Bengal, under direct rule	{	158,200	66,506,500
tributary states	{	87,988	2,323,400
2. Assam, under direct rule	{	45,302	4,815,200
3. North-west Provinces, ² under direct rule	{	105,395	44,107,100
tributary states	{	5,125	745,700
4. Panjab, under direct rule	{	104,975	18,794,300
tributary states	{	103,899	3,853,300
5. Central Provinces, under direct rule	{	84,208	10,455,500
tributary states	{	28,834	1,050,000
6. British Burma, under direct rule	{	88,556	3,707,600
7. Territories under the Governor-General of India (Ajmir, Berar, Coorg)	{	22,422	3,302,300
II. MADRAS, under direct rule	{	138,856	30,839,200
tributary states	{	9,818	3,001,400
III. BOMBAY (with Sind), under direct rule	{	124,102	16,383,400
tributary states	{	60,789	6,941,600
Carry forward		1,146,794	216,826,500

² Including Oudh.

The home government of the British Indian Empire is entrusted to a Secretary of State for India, who is aided by a council of fifteen members composed chiefly of men who have resided for a long period in India. The local and executive government in India itself is vested in a viceroy or governor-general resident at *Calcutta*, acting under the orders of the Secretary of State, and in his council, consisting of six members who preside over the departments of foreign affairs, finance, the interior, military administration, and public works. Lieutenant-governors and commissioners of the various provinces are appointed by the Governor-General. The general administration is conducted by Europeans belonging to the covenanted civil service, which is recruited from the successful candidates at competitive examinations, and by Europeans and natives of the uncovenanted service appointed by the authorities in India.

The administration of the native states, of which there are between 400 and 500, is generally vested in a hereditary despotic prince or *rajah*,¹ controlled to some extent by a British resident. The European army in India numbers about 65,000 men; the native army, under British officers, 125,000 men. The combined armies of the native princes of India amount to about 315,000 men in all.

20. Revenue.—The main source of public revenue in India is the *land-tax*,² which yields two-fifths of the whole receipts. The rest is derived chiefly from the *opium* monopoly, and from the tax on *salt*. The cultivation of opium is prohibited except for the purpose of selling the juice to the Government at a fixed price. In Bengal it is prepared at the Government factories of *Patna* and *Ghazipur*, and then sent to *Calcutta* for export to China; in Bombay it is manufactured in the native states of Malwa and Gujrat, and passes, after

		Brought forward	Area in sq. m.	Population.
IV. STATES UNDER NATIVE PRINCES.			1,145,794	216,828,500
1.	Rajputana		131,000	11,005,500
2.	Central India and Bundelkhand		74,850	9,200,900
3.	Baroda		8,000	2,154,500
4.	Haidarabad		90,000	9,167,800
5.	Mysor		29,325	4,186,400
6.	Manipur		7,600	126,000
Total British dominions			870,016	199,795,200
,, tributary states			587,228	52,872,400
A.			1,457,244	252,667,600
B. INDEPENDENT STATES.				
1.	Himalayan States.		Area in sq. m.	Population.
	Nepal		56,750	3,000,000
	Bhutan		13,600	200,000
	Tribes N. of Assam		20,000	100,000
2.	Tribes S. of Assam		18,000	130,000
Total B.			108,350	3,430,000
C. FOREIGN POSSESSIONS.				
1.	French Possessions (Pondichéry, Chandranagar, Karikal, Mahé, Yanam)		196	280,381
2.	Portuguese Possessions (Goa, Damão, Diu)		1,437	444,987
Total C.			1,633	725,368

¹ *Rajah* = king; *Maharajah* = great king.

² Collected in some parts from wealthy land-farmers, called *Zemindars*; in others direct from the *ryots*, or small cultivators; or from *village communities* regarded as separate municipalities.

paying duty, to Bombay. The largest branch of expenditure is that for the army, the maintenance of which requires about fifteen millions sterling every year.

21. Bengal Presidency.—By far the largest and most populous division of India is that of the *Bengal Presidency*, which reaches across the whole breadth of the great northern plain from Assam to the Panjab, and thence southward over British Burma.¹ It also includes the Central Provinces, with Mysor and Coorg in the south of the Deccan.

Its richest province, the *Lieutenant-Governorship of Lower Bengal*, extends over the fertile plain of the Ganges from its delta back to the base of the Himalaya, eastward to the Garo and Tipperah hills south of Assam, and westward to where the Gogra joins the Ganges. The tributary states attached to this province are those of *Sikkim* on the slope of the Himalaya between Nepal and Bhutan, of *Kuch Behar* and *Tipperah Hills* on the north-west, and of *Chutia* (or *Chota*) *Nagpur* and the *Orissa Mehals* extending south-west along the Gulf of Bengal. Within it are the cities of *Calcutta* (pop. 795,000), the capital of British India, on the left bank of the Hugli or western delta branch of the Ganges, a modern town built since 1700 on the site of a small native village called *Kali Kutta*, the "village of the goddess Kali," whence the name of the present town; the town of *Howrah* on the opposite side of the river, where the great railroad terminates; *Murshedabad*, once a place of great wealth and splendour; *Dacca*, formerly celebrated for its fine "flowing water" muslins, 150 miles north-east of Calcutta; *Bhagalpur* and *Patna*, on the right bank of the Ganges on the west of the province. *Cuttack*, at the head of the delta of the Mahanadi, is the chief town on the south-west maritime border of the province; *Chittagong*, the chief seaport on the east of the Ganges delta. The mountainous forest slope of *Sikkim* on the north has the hill station and sanitarium of *Darjiling* (7168 feet above the sea), where the delightful climate resembles that of England in temperature. In the province of Assam the chief places are *Gauhati* and *Goalpara* on the Brahmaputra, and *Sylhet* on a tributary of the river south of the Garo hills.

22. Since 1877 the territory of the *Lieutenant-Governorship of the North-west Provinces* has been increased greatly by the addition of the former province of *Oudh*,² so that it now embraces all the upper basin of the Ganges and Jumna rivers in the great plain. Its great towns are *Benares*, the "most holy city" of the Hindus, on the left bank of the Ganges; *Allahabad*, the "abode of Allah," at the confluence of the Ganges and Jumna; the great military station and commercial town of *Cawnpur* on the right bank of the Ganges, terribly memorable for the massacre of English women and children here during the mutiny of 1857; *Lucknow*, the principal town in Oudh, also memorable in the history of the insurrection, where the British garrison held out till they were reinforced by General Havelock, and relieved by Sir Colin Campbell; *Agra*,³ the residence of the Mogul emperors from 1504 till 1607 on the right bank of the Jumna; the trading towns of *Farrakhabad*

¹ British Burma belongs geographically to Farther India, under which division it is described (see p. 243).

² The annexation of Oudh in 1856 was one of the causes of the Sepoy insurrection in 1857. Till lately it constituted a separate chief-commissionership.

³ Near Agra are several of the finest specimens of Indian architecture: such are the *Taj Mahal*, a splendid mausoleum of white marble built by the Emperor Shah Jahan, and in which he is buried; the tomb of the Emperor Akbar at *Secundra*, north of the city; and the *Moti Masjid*, or "Pearl Mosque," in the Fort.

near the Ganges, and *Bareli* north of it, with *Shahjahanpur* between; and *Mirat* (*Meerut*) midway between the Ganges and *Jumna*.

23. The *Lieutenant-Governorship of the Panjab* reaches from the *Jumna* to the *Sulaiman* mountains on the north-western boundary of India. Its great cities are those of *Dehli*, on the right bank of the *Jumna*, the "Rome of India," in all that relates to ancient grandeur, over the ruins of which the fifth Mogul Emperor, *Shah Jahan*, founded the great modern town; *Lahor* on the *Ravi*, the meeting-point of the great railway lines of north-west India; *Amritsar*, near it, the religious metropolis of the Sikhs, containing the "pool of immortality," on an islet in which stands the chief temple; *Attock*, a fortress at the great crossing-place of the *Indus*; and *Peshawar*, in the extreme north-western corner of India on the main route into *Afghanistan*; the trading and manufacturing town of *Multan* near the *Chinab*, in the south, and *Dera Ismail* and *Dera Ghazi-Khan*, near the right bank of the *Indus*.

The great tributary state of the *Panjab* province is that of *Kashmir*, a territory much larger than our island of Great Britain, reaching from the plain of the *Panjab* northward over the western *Himalaya* ranges to the borders of *Tibet*; it has splendid and sublime scenery, huge forest-covered mountains, deep gorges and valleys filled with rich and varied vegetation. Its climate has four seasons like those of Europe, winter covering the ground with snow; its people include races of Hindu and Tatar type the latter existing especially to the north-east; its goats, yaks, and wild sheep yield the wool from which the famous shawls of *Kashmir* are made; and its rosefields give the finest attar. The beautiful "Vale of *Kashmir*" within it is an expansion of the valley of the upper *Jhilam* river, and is an oval plain about 50 miles long and 10 miles wide, within which roses are cultivated for distillation. Here also is *Srinagar*, the largest town in the state. The districts of *Baltistan* and *Ladak*, between the *Karakoram* range and the *Himalaya*, are included in this territory, their chief towns being *Iskardoh* and *Leh* on the upper *Indus*.

24. The *Chief Commissionership of the Central Provinces*, formed into a separate division of British India as lately as 1861, extends over the northern area of the *Deccan* plateau mainly between the upper *Narbada* and *Tapti* and the upper *Mahanadi* and *Godavari*. Alternating in hill and valley, woodland and cultivation, the general aspect of this province is grateful to eyes fatigued by the sameness of the dusty Indian plains. Its capital town is *Nagpur*, on the stream called the *Nag*, a tributary of the *Godavari*, a large trading place celebrated for its cloth fabrics. A railway, following the line of the *Purna*, a tributary of the *Tapti*, unites it with the main line between *Bombay* and *Calcutta*.

25. Under the Governor-General of India are the territories of (1) *Ajmir*, an isolated tract lying along the *Aravali* hills in the midst of *Rajputana*; (2) *Berar*, a valuable province lying west of *Nagpur* between the *Wardha* tributary of the *Godavari* and the *Tapti*, with the town of *Amraoti* on the railway between *Bombay* and *Nagpur*, and the walled town of *Elichpur*; (3) *Mysor*,¹ an extensive country in the interior of the southern apex of India, between the *Eastern* and *Western Ghats* and the *Nilgiri* hills, consisting for the most part of elevated undulating table-land watered by the upper *Kaveri*, with here and there remarkable isolated granite rock masses called *droogs*, generally crowned by fortresses; *Mysor*, the present capital town, lies a short distance south of *Seringapatam*, the former capital, famous for its siege and capture by the British in 1799, after which this territory fell into our hands; *Bangalor*, north-east of *Mysor*, is the great military station of this territory; (4) *Coorg*, a rugged mountain district between *Mysor* and the *Malabar* coast.

¹ *Mysor* was restored in 1881 to its native Maharaja.

26. Madras Presidency.—The *Madras Presidency* reaches from Ganjam south of Cuttack and the delta of the Mahanadi to the Malabar coast, embracing the maritime plains round the south of the promontory of India.

The most important native states attached to it are those of *Travankor*, in the extreme south-west, and *Cochin*, north of it, beneath the Ghats. *Madras* (400,000), the only large city of the Presidency, extends along the immediate coast of the Gulf of Bengal for nine miles, and consists of the European quarter, which has grown up round Fort St. George, built in 1639 on the first territory acquired by the British in India, and the "pettah" or native town. Its roadstead is good, but communication between ships and the shore through the heavy surf is generally difficult, and in the months of November and December, when the north-east monsoon is at its height, almost impossible. The other important coast towns and trading places are:—*Vizagapatam* and *Masulipatam*, north of Madras; *Cuddalore*, *Tranquebar*, *Negapatam*, and *Tuticorin*, south of it, on the Coromandel coast and Gulf of Manaar; *Trevandrum*, *Cochin*, *Calicut*, *Cananor*, *Beypur* (the terminus of the railway from Madras) and *Mangalore*, on the Malabar coast; *Vellar*, a fortified town on the Palar, and on the railway west of Madras; *Tanjor* and *Trichinopoly*, on the Kaveri river; *Madura*, remarkable for its pagodas, and *Tinneveli*, in the south, are the important towns of the interior of the Presidency; *Arcoot*, on the Palar, west of Madras, is the scene of Clive's famous victory in 1751.

27. Bombay Presidency.—The *Presidency of Bombay*, the smallest, reaches along the western borders of India from Mysor to Sind,¹ in the plain of the Lower Indus.

Its capital, *Bombay*² (645,000), on the south corner of its island, is by far the most important outlet of India, and the great emporium of its trade with Europe. From it railways have been made to bring to it the traffic of Gujrat in the north, Calcutta and the great towns of the Ganges valley in the east, Nagpur in the Central Provinces, and Madras in the south-east. After Madras it is the oldest British possession in India, having been ceded to Charles II. in 1661 as part of the dowry of his queen, Catherine of Portugal.

The other great towns of the Presidency are *Puna*, south-east of Bombay, the former Mahratta capital, and now the great military station of the Deccan, 1800 feet above the sea; *Nasik*, a sacred city of the Hindus, north-east of the capital; *Surat*, on the Tapti, near its mouth, the site of the first English factory in the Mogul dominions; *Ahmadabad*, farther north, is an ancient walled city, connected by rail with Bombay; *Karachi*, the great port of Sind, almost at the western extremity of India; and *Haidarabad*, the walled capital of Sind, near the head of the delta of the Indus. The most important of the many native states attached to the Bombay Presidency are those situated in Gujrat and Kachh (Cutch), especially the Kathiawar group.

28. Tributary Native States.—The largest group of Native States which remain separate from the Presidencies, but which are under the superintendence of agents appointed by the British Viceroy, is that of the immense thinly-peopled tract of *Rajputana*, which lies south of the Panjab, between

¹ From the Indus or Sindhu = "sea."

² The native name is *Mambai*, from a temple to the goddess Mamba. The Portuguese made of this *Bom Bahia* = good bay or port, in reference to its excellent harbour and anchorage, whence our name Bombay.

Sind on the west and Central India, including the Great Indian Desert and the Aravali range, excepting the portion of it which is occupied by Ajmir. This group comprises no fewer than nineteen separate states. The most important towns of this region are *Jaipur*, a walled modern city in the east, the residence of the British political agent; *Jodhpur*, the capital of the largest of the Rajput states; and *Bikanir*, in the midst of the great desolate plain of the Thar.

The separate states of the *Central India Agency*, extending over the plateau of Malwa, between Rajputana and the Central Provinces, are also exceedingly numerous. The British agent for this group resides at *Indor*, in the Vindhya mountains. The largest of them is that of *Gwalior*, the territory belonging to the Sindia family, in several detached portions in the valleys of the Chambal, Tapti, and Narbada. Its capital town of the same name, which has one of the most celebrated hill forts of India, was scaled by the British in 1779 and again in 1858, and is now occupied by their troops. *Ujein*, north of Indor in the same territory, was one of the sacred cities of the Hindus, and the first meridian of their geographers. *Bhopal*, a Mohammedan state in the Vindhya range, is also important. The *Bundelkhand* group of states, in the eastern portion of Central India, and the *Bhagalkhand* or Rewa group, rising in the plateaus above the valley of the Ganges, form minor agencies of Central India.

Baroda is an important native state, between the lower Narbada and the Mahi river, which enters the head of the Gulf of Cambay, and its capital of the same name, a large and well-built city on the northern railway from Bombay.

The native state of *Haidarabad*, more extensive than Great Britain, occupies the central area of the Deccan plateau, and is governed by a potentate called the Nizam or "Regulator," a title assumed by the Viceroy of the Deccan when he made himself independent of the Mogul Empire on its dissolution in the early part of last century. The city of *Haidarabad*, the Nizam's capital, and the seat of the British Resident, is a finely-placed fortified city, near the centre of the territory. The ruins of *Golconda*, containing the tombs of the kings who ruled over the Deccan in the sixteenth and seventeenth centuries, lie seven miles west, and the British military cantonments of *Sikan-drabad* six miles north of Haidarabad. *Aurangabad*, in the north-western corner of the territory, contains the palace of Aurangzebe, and the mausoleum built by him after the model of the Taj Mahal of Agra.

Manipur is a rugged mountainous country south of Assam, and on the borders of Burmah, inhabited by a number of wild, warlike tribes. The capital town of the same name is on an upper tributary of the Irawadi, and is the residence of the rajah and of a British political agent.

29. *Independent States.*—Most important of the territories within the geographical limits of India which still retain their independence of Britain is the Himalayan state of *Nepal*, which reaches along the face of the mountains from where the Gogra tributary of the Ganges takes its rise, to Sikkim in the east, reaching down from the snowy crests and passes into Tibet to the uninhabited jungle of the Terai, which separates it from the *British provinces*. It occupies a space nearly as large as England, but its surface of mountain and valley is naturally characterised by the widest extremes in climate and vegetation. Its inhabitants belong to various races and tribes, and almost every valley and village is practically independent of the others. In the middle of last century, however, the tribe of the *Ghoorkas*, Hinduised Tatars, gained the ascendancy, and, invading Tibet, drew down on themselves a large Tibetan army, after which Nepal became a Chinese dependency. The incursions on British territory by the Nepalese gave occasion for the British invasion of 1815,

after which a peace was ratified by which the paramount power of Britain was recognised, and an English Resident was placed at *Khatmandu*, the capital. Besides this Resident, however, no Englishmen are allowed to enter the country for its exploration, and our Government has little influence in the country. The existing relations between Nepal and China are obscure, but it is said that an embassy is sent every five years with presents to the Court of Peking.

Bhutan, on the slope of the Himalaya, east of Sikkim and north of the valley of Assam, is also an almost unknown region. Its small Buddhist population, divided between idle priests and wretched cultivators, is under a "Deb Rajah" or temporal sovereign, and a "Dhurm Rajah" or spiritual ruler. The chief town appears to be that of *Punakha*, on a northern tributary of the Brahmaputra.

Even less is known of the wild tribes who occupy the Himalayan slope east of Bhutan. The peoples of Assam are descendants of the Tatar people who conquered that part of India, and held it against the great Mogul till the whole province was taken possession of by the British. They are partly Hindu, partly Mohammedan, but many wild indigenous tribes still inhabit the inaccessible jungle-covered hills between Assam and Burmah, some of them black undersized and naked savages, living in huts constructed on scaffolds, and armed with bows and arrows and other rude weapons.

30. Foreign Possessions.—The towns and small territorial possessions still retained by the French in India are with one exception on the coasts of the Gulf of Bengal. *Pondichéry*, on the Coromandel coast, 86 miles south of Madras, first occupied by the French in 1672, and finally restored to them by the English in 1815, is the capital of their possessions in India. *Chandranagar*, on the Hugli, 17 miles from Calcutta, was also twice taken by the British, and restored in 1816; it trades with Calcutta. *Yanan* is at the mouth of the Godavari; *Karikal*, on the estuary of the Kaveri, in the south; and *Mahé*, the only French settlement on the Malabar coast, lies north of Calicut.

The Portuguese hold a large territory at *Goa*, in the middle of the west coast, which was conquered by Albuquerque in 1503; its old capital has fallen to decay; the newer one of *Panjim* or New Goa is the seat of government of the Portuguese Indian possessions, and lies on one of the best natural harbours of this side of India. *Damaraun* lies south of Surat, at the entrance to the Gulf of Cambay, and has a small fortified port. *Diu*, also a seaport, is on an islet at the extreme south of the peninsula of Gujrat, and was acquired in 1515.

CEYLON.¹

1. The great pear-shaped and mountainous island of Ceylon, depending from India, 265 miles long from north to south, may be compared with Ireland in extent. It is separated from the mainland by Palk Strait and the Gulf of Manaar, but almost united to it between these waters by the singular natural barrier called *Adam's Bridge*,² which only allows the passage of ships by two narrow channels.³

¹ Native *Singhali*, ancient *Taprobana*.

² The Mohammedans believe that when Adam was driven out of the paradise of Ceylon he left it by this chain of sandbanks.

³ The *Pambam* and *Rameswaram* channels.

The surface consists of a low maritime belt, fringed with palm-covered islets and coastal lagoons, encircling an interior table-land, the elevation of which has given it the climate and varied vegetation which make the island the most delightful of the east—"the jewel of the eastern seas." The lower ranges present verdant slopes; luxuriant forests, overhung by creepers, cover the higher hills; tree-ferns and gigantic rhododendrons next appear, and the innermost peaks shoot up bare and rocky in fantastic forms. Between the peaks deep gorges, opening to wider valleys, radiate outward. The highest summits are those of *Pedrotallagalla*, 8280 feet, and *Adam's Peak*, 7420 feet.

2. The north-east *monsoon* blows from November till February; the south-west, from April till September, with calms and variable winds between. Both monsoons bring rain, which falls on that side of the island which faces the wind for the time, leaving the other, or leeward side, dry. On the one side the rivers are then flooded, while on the other the tanks filled during the last rains have to be resorted to for irrigating the land, and *vice versa*. Beyond this, a difference in seasons is scarcely noticeable, the climate being in general very healthy, and the temperature remaining nearly constant throughout the year.

3. Among the rich and varied products of the vegetable kingdom in this island the most valuable are *coffee*, introduced from Arabia, and grown in the plantations which extend along the hill slopes, between 1000 and 2500 feet above the sea; *cinnamon*, the bark of a species of laurel; and the *coco-nut palm*, which flourishes all round the south and west coasts, yielding fruit, oil, and the useful fibre called "coir." Tobacco, indigo, and cotton are also grown in all parts, and the forests have many trees whose timber is of great value. The animals resemble those of India; the tiger and lion are absent, however, though elephants abound. The gems of the islands, especially sapphires, have been celebrated from time immemorial. A celebrated pearl-fishery is carried on in the Gulf of Mansar, and the best divers remain eighty-seven seconds under water.

4. The people of Ceylon, numbering about 2½ millions, consist of the *Singhalese*, the most numerous, the descendants of those colonists from the Valley of the Ganges who first settled on the island about five centuries before the Christian era, delicate in limbs and features, false and cowardly; the *Tamils*, who have come across from the mainland of Southern India in large numbers, and who now form the greater part of the inhabitants of the north of the island; the *Moormen*, Mohammedans of Arab descent it is believed, who are met with everywhere as active traders; and the remarkable tribes of the *Veddahs*, outcasts, believed to be the descendants of the aborigines of Ceylon, living in the woods and remote parts of the eastern side of the island in a state of complete barbarism, scarcely removed from the beasts of the forest. Only 4800 *British* are resident in Ceylon.

Buddhism is the prevailing religion of the island. A mark five feet long in the rock of Adam's Peak is revered as the sacred footprint of Buddha, and a piece of ivory, supposed to be his sacred tooth, is guarded with jealous care, and preserved in an elegant shrine at Kandy.

5. Ceylon (which fell under our rule in 1815) is a British colony under a Governor, who is independent of the Viceroy of India. Its trade is mainly carried on with Britain and with India, exporting coffee, coco-nut oil, and cinnamon, and receiving manufactured goods. *Colombo* (112,000),¹ on the west coast, is the well-fortified capital and seat of government, and by far the largest town. It has a large share of the commerce, though its port is small, and large vessels must lie off in the roads. *Kandy* (the "hill"), the former

¹ Properly Corumbu = "the harbour."

capital, is high in the mountainous interior of the island. *Trincamali* is the chief port of the north-east coast, and has a fine landlocked harbour; but the secure port of *Galle*, or Point de Galle, at the south-west extremity of the island, has become of very great importance as the central station and depot of the great lines of steam communication in connection with the Suez Canal, Bombay, Calcutta, Singapore, China, Japan, and Australia.

6. The *Laccadive Islands*,¹ the higher peaks of coral atolls, form a cluster about 150 miles off the Malabar coast, are inhabited by a people of Arab origin called "Moplays," and are tributary to Madras. The *Maldivé*² coral chain, south of the former, extends for a distance of nearly 500 miles. Its palm-covered islets are partly inhabited also by Mohammedans, whose sultan pays tribute to the Governor of Ceylon. Fishing for the "cowrie" shells, which circulate as money in many parts of the coasts of the Mediterranean and in Africa, gives employment to the islanders. The *Chagos Archipelago*, south of the equator, a continuation of this chain, belongs to Britain, but is considered as a dependency of the Mauritius.

FARTHER INDIA.

1. The south-eastern peninsula of Asia, extending south from China and Assam, between the Indian Ocean and the China Sea, occupies a space nearly ten times as large as our island of Great Britain. It is formed by long ranges reaching south from the great table-lands of Central Asia, the broad valleys between which are watered by its four great rivers, the Irawadi, the Salwen, the Menam, and Me-khong; almost the whole of it lies within the tropical zone, and in its hot moist climate vegetation flourishes with extraordinary luxuriance. Its peoples, excepting the Malays of the long southern peninsula, belong to the Mongolian family, and their languages have much in common with those of China and Tibet. Buddhism is the prevailing religion of the peninsula except among the Malays, who are chiefly Mohammedans. The despotic empires and kingdoms between which the greater part of Farther India is divided are still far beneath the empire of China in civilisation, and include within their limits many tribes scarcely removed from complete barbarism.

We shall take up their description in the order given in the note.³

¹ Lakara Divha, or hundred thousand islands.

² Mal = a thousand; thousand isles; or from Malaya-Divha = the islands of Malaya-vari, or Malabar.

	Area.	Population.
³ British Burman provinces	88,556	8,707,600
Burman Empire	201,700	4,000,000
Siam	281,000	5,750,000
Annam	170,000	21,000,000
French Cochinchina	22,960	1,600,000
Cambodia	32,400	890,000
Independent Malacca States	31,500	300,000
British Straits Settlements	1,445	350,100
Farther India	<u>829,561</u>	<u>87,597,700</u>

BRITISH BURMAH.

2. The northern division of British Burmah, called *Arakan*, occupies the narrow slope between the crest of the *Yoma mountains*, which shut in the valley of the Irawadi, and the low coast of the Gulf of Bengal, which is broken by many creeks, and fringed by islands, the chief of which are those of Ramri and Cheduba. Much of the low country is still covered with jungle, and the climate there is unhealthy; but the ordinary products of India are grown in abundance, and large parts of the marshy land are specially suited for the cultivation of rice, which is the staple export of the province. Its people are partly Hindus and Mohammedans, partly the aboriginal Burmese tribe called the *Mags*. *Arakan*, the old capital, lies fifty miles from the sea on the north. *Akyab*, on one of the coast islands, is the most important town and seaport of the division.

3. The central division of *Pegu*, formerly the richest and most fertile province of the Burman empire, was annexed after the war of 1852. It lies on each side of the lower Irawadi, and comprises the vast delta of the river, which covers a space of about ten thousand square miles, with its network of small channels. *Rice* is the great product of this alluvial region. The higher grounds round it have the finest *teak* forests in the world, which give the most valuable shipbuilding timber of the Indies. *Pegu*, the old capital of the province, lies inland, but *Rangoon* (98,800), on an eastern branch of the delta of the Irawadi, is by far the largest town and trading port of the province. *Prome* on the left bank of the Irawadi, in the interior, and *Bassein*, on a western branch of the delta, are also important places. The majority of the inhabitants are *Burmese*, but a strange tribe called the *Karens*, who have a tradition of their migration from far north, live in the wilder parts of the north-east of *Pegu*.

4. The southern division of British Burmah is that of *Tenasserim*, which includes the province of Martaban. It extends along the forest-covered western slope of the northern part of the Malay Peninsula from the lower Salween river to the Isthmus of Kra. Its coasts, unlike those of *Arakan*, are bold and rocky and fringed with islands. The interior is a wilderness of thickly wooded hills with long valleys running north and south between the parallel ranges, in which wild animals, the elephant, rhinoceros, and tiger, especially, are very abundant; coal and iron seem to be widely spread through the country. The chief town and seaport is that of *Maulmain*, at the mouth of the Salween, from which great quantities of *teak* timber are sent out; opposite it is the smaller town of *Martaban*, the first place that fell into the hands of the British in 1852, which gives its name to the wide gulf between *Tenasserim* and *Pegu*. *Amherst*, a little farther south, is also a timber port. *Tavoy* and *Mergui*, the latter at the mouth of the *Tenasserim* river, towards the south of the division, are the other considerable trading towns. The innumerable islets of the *Mergui* archipelago off the coast are famed for their edible birds' nests, which form a great article of commerce.

Over all the coasts of British Burmah the wet season (May to October) brought by the south-west monsoon, alternates with the dry season, or that during which the north-east wind blows.

BURMAH.

5. The *Empire of Burmah* is now confined to the north-western interior area of the peninsula, and borders northward on the Chinese province of Yunnan and the Patkoi range, which separates it from Assam ; from Arakan, on the western seaboard, it is separated by the Yoma range ; and on the south it is bounded by the British province of Pegu and by the kingdom of Siam. It thus includes all the central and upper basin of the river Irawadi, and it is along the valley of that river that the greater part of the population and the most settled portion of the state extend. Eastward, Burmah embraces the central portion of the corresponding valley of the Salwen ; and a semi-independent region, occupied by a number of tribes called the Burmese Shans, extends still farther eastward across the upper valley of the Me-khong river. In area the Burman territory is more than twice as large as Great Britain.

6. *Climate and Products.*—In general the country rises gradually from the lowlands of its wide valleys in the south up to a wild mountain region in the north. In the beginning of May the heat in southern Burmah exceeds 100° Fahr. ; in the latter part of that month the south-west monsoon sets in, bringing the rainy season, which lasts till September, and during which the temperature averages about 82° Fahr. Along the valleys, rice, the chief crop, with maize, wheat, sugar-cane, tobacco, cotton, and indigo are cultivated : elsewhere the forests are rich in all kinds of timber, especially the valuable teak. Burmah has also great mineral wealth : alluvial gold in the rivers, silver in the mountains of the east, much coal and iron, copper and lead, petroleum, amber and jade, sapphires, and other precious stones. The elephant abounds in all the forests, as well as the rhinoceros, tiger, leopard, and wild pig. Domestic animals are the ox, buffalo, and horse ; white elephants are pampered as the insignia of royalty.

7. *People.*—The Burmans proper of the Irawadi valley are well proportioned and active people, though of small stature, light brown in colour, with straight black hair, which they bind in a knot on the top of the head. In knowledge and industry they are lower than the Hindus or the Chinese. Society is divided among them into seven classes—the royal family, public officers, priests, merchants, cultivators, and the outcasts, who are generally condemned criminals. The government is a pure despotism, the life and property of every subject being at the mercy of the sovereign. With the Burmans, the *Telaings* or Moans, descendants of the ancient Peguans, have become incorporated ; but wild *Khyens* and other tribes live in the western mountain border. The *Shans*, a peaceful and industrious race, are probably the most numerous of the peoples of Farther India ; according to their own traditions, they are the remnant of the inhabitants of a once powerful Shan empire, which had its chief seat in southern Yunnan ; this great empire is now represented by the one independent state of Siam, all the other divisions or petty states into which it has fallen are tributary either to China, Burmah, Annam, or Siam, according as they lie nearest those countries. The language of the Shans is the same as that of Siam, with variations only in dialect. Some parts of the mountains reaching south into the country of the Burmese Shans are still occupied by wild tribes, who are looked upon as the aborigines of

this region, who have been gradually driven to these less accessible districts. Such are the *Laos*, described as a small, ill-formed, ugly people, with flat noses and low brows, who keep all strangers out of their fastnesses.

The religion of Burmah and of the Shan states is Buddhism, which has been preserved here in its greatest strictness of observance. Temples, pagodas, and monasteries are in great numbers throughout the land.

8. *Trade*.—Since the loss of the richest maritime provinces to Britain, the trade of Burmah is inconsiderable; the chief trade route of the country is naturally the river Irawadi, which is now regularly navigated by a British steam flotilla company. At the head of its navigation is the town of *Bamo*, at which three overland caravan routes from Yunnan converge, and which is consequently an important mart of exchange; the journey over these difficult mountain routes, however, requires six weeks.

9. *Towns*.—The banks of the Irawadi in Burmah proper are dotted with towns; at the great bend of the river, in the centre of the country, there is a cluster of cities, several in ruins, which have at various times been the capitals of the empire. Here are the ruins of *Ava*, which gave its name to the kingdom after the fourteenth century; and *Amarapura*, which was the capital before 1819; when *Ava*, which had again been made capital, was destroyed by earthquake in 1839, the seat of government was removed to *Mutshobo*, on the opposite side of the river; finally, *Mandalay*, north of *Amarapura*, became the capital city, and thither was transferred the imperial residence, with its manifold roof and sacred *hti*, or umbrella, at the top of all. This town has an enclosing wall and ditch, beyond which extend regularly planned suburbs; it glitters with gilded pagodas. Lower down the Irawadi, on its left bank, lie the ruins of *Pagan*, which was the capital from the ninth till the thirteenth century, remarkable for its architectural remains, which have given rise to the Burman proverb, "numberless as the temples of Pagan."

SIAM.¹

1. The central region of Farther India is occupied by the interesting *Kingdom of Siam*, which extends northward to an uncertain limit with Burmah in the country of the Shans, and southward, round the shores of its gulf, to include the greater part of the long Malay peninsula. Westwards its limits are conterminous along the hills with those of the British Burman provinces, and eastward the Siamese territory reaches to the hills of inner Annam. The extent of the country is at least three and a half times that of Great Britain.

2. The most important district by far is the wide valley of the *Menam* river, which has been called the "Nile of Siam," since it overflows its banks from June till November, and since the success or failure of the great rice crop along its banks depends on the regularity and amount of the fertilising overflow. This is also the great highway of the country, and round it are the most settled and advanced districts of Siam. The extensive north-eastern region in the central basin of the Me-khong river is inhabited by tribes of Laos of the same family as the Shans of Burmah, darker in complexion than the Siamese proper, and slender in figure, and generally dependent on hunting for

¹ Native *Thai* or *Muang-thai*, the kingdom of the free. Our name *Siam* is said to be from the Malay *Sayam* = "dark coloured."

their subsistence. These Laotian tribes or little principalities send tribute to the capital city of Bangkok, in Siam proper, every three years, but are otherwise left under their own patriarchal rulers. The portion of the south-western peninsula which is embraced within the kingdom of Siam is also very loosely connected with its government: the Sultans of the Malayan states (Patani, Quedah, Kalántan, and Tringanu) pay only a nominal triennial tribute, sending a golden or silver tree or flower as an emblem of their dependence.

3. *Climate*.—The tropical climate of Siam is divided into the hotter wet season, while the south-west wind is blowing, and the cooler dry, during the northerly monsoon. Large areas of the land are covered with dense forests, which yield teak and the perfumed eagle wood in abundance. Here, as in Burmah, the white elephant is an object of veneration. The mineral treasures of the country are very great both in metals and gems; rice, however, is the great product and export of Siam.

4. *People*.—The Siamese proper form about a third of the population of the kingdom within its nominal limits; they are well-proportioned people, shorter generally than the Chinese, but taller than the Malays, with olive-coloured skin and black hair, which they shave so as to leave a tuft on the top of the head, supposed to resemble the lotus flower, which is a sacred object to all Buddhists. The Laos form another third; and the Chinese and Malays divide the remaining numbers nearly between them. All the trade of the country is in the hands of the Chinese, for the Siamese are idle and lacking in enterprise; the slight, dark, well-formed Malays of the peninsula are in part civilised and settled agriculturists, part "men of the sea," sea gypsies, or pirates, scouring the coasts in their armed prahus.

5. *Government*.—A number of classes are recognised in Siamese society, from the nobles and soldiers downward to the slaves.¹ The political power rests with the first-named class, and the highest authority is vested in two kings, one paramount, who is regarded with most reverential awe, and the second subordinate. The royalty is hereditary, but does not necessarily pass to the eldest son. For administrative purposes, the country is divided into forty-one provinces, each under a governor.

6. The prevailing religion is Buddhism, and the pagodas in their strange forms with their manifold roofs are the prominent buildings in all the towns. There is comparatively little industry in the country, mainly owing to the existing serfdom, unwilling labour being forced from the lower classes during a certain period of every year by the higher nobles or owners of the land; and nearly the whole of trade, as we have noticed, is in the hands of the Chinese. About the court, however, considerable literary activity prevails; an almanack is issued annually, and it may be taken as evidence of the capacity of the Siamese that their late king was master of Sanscrit, of English, Latin, and French, and an excellent astronomer.

7. *Chief Towns*.—The capital and metropolis of Siam, and the centre of its trade, is the city of *Bangkok* (600,000), which lies on both sides of the Menam, about 20 miles above its mouth. Here are the royal palaces, with hundreds of pagodas, surrounded by bamboo houses built on piles; all the river also is covered with floating boathouses. The former capital, named *Ayuthia*, lay about 45 miles farther up the river; it was founded in 1350, which date marks the beginning of authentic Siamese history, and was destroyed in a war with Burmah in 1766. *Shan-ta-bun*, on the west of the gulf of Siam, south-east of the capital, is a trading town.

¹ Called *Kha*, in contrast to the *Thai* or free men. These are either prisoners of war, debtors who are working out their owings, or the very poor, who have sold themselves for a livelihood.

In the tributary regions of the Laos the most important centre of population appears to be the town of *Luang Phrabang*, on the central Me-khong, the capital of the most northerly of these principalities. In the Malay peninsula, *Sungora*, near the centre of its east coast, south of the coast island of Tantalam, is a place of considerable traffic. *Quedah*, on the west coast, *Palani*, *Kalantan*, and *Tringani*, on the east, are the capitals of the Malay states which were subjected in 1821.

ANNAM.

1. The kingdom of Annam,¹ reaching over more than twice the extent of Great Britain, includes the two main divisions of *Tong-King*² the wide alluvial basin of the Song-Ka river next to China, and *Upper Cochin China*, consisting of the narrow eastern maritime slope of the peninsula of Farther India to the China Sea, as well as a portion of the little known interior country behind the mountains towards Cambodia.

2. Northern *Tong-King* is mountainous and inhabited by various hill tribes, among whom are the *Khas*, who are said to be the aboriginal people, and who are lighter in colour and of bigger build than the yellow brown Annamese, who are generally small and spare in stature, with mongol type of feature and long brown hair. The Song-Ka fertilises a large area of the centre, and the marshy coast-lands south of its mouth give large quantities of rice. The fisheries of these coasts are very extensive, supplying not only the immediate wants of the people, but those of southern China also. This division of Annam has a climate resembling that of China in its extremes of oppressive summer heat and severe winter cold. Fearful *typhoons* occasionally bring great destruction, especially to the fishing population. A wall marks the boundary of Cochin China.

3. The narrow maritime division of *Upper Cochin China* has a good and pleasant climate separated into the dry and wet seasons, the former occurring with the south-west monsoon, which brings rain to the interior country behind the mountains, the latter with the north-east monsoon, carrying with it the vapours of the China Sea. Besides Ceylon this is the only important cinnamon yielding country, and this spice forms the chief article in the tribute sent to China. A small territory in the south of Annam, called *Tsian-po* or Champa, is inhabited by a people who resemble the Malays rather than the Annamese; its great product is the eagle-wood,³ which diffuses a very pleasant odour in burning, and which is accordingly in request in all the temples of eastern Asia. Besides these divisions, Annam embraces also a wide district behind the mountains, westward towards Cambodia, the forests of which are occupied by the almost independent barbarous tribes called the *Moi* or *Loi*, who are apparently of the same stock as the Champas, and are supposed to be aboriginal.

4. Previous to the Mongol occupation of China in the thirteenth century *Annam*, or the southern country, formed part of that empire, and its ruler still acknowledges the Emperor of China as his superior, though his vassalage is only nominal. The government is a hereditary military despotism, seven mandarins of the first rank forming the supreme administrative body; mandarins of the second rank act as viceroys of Tong-King and Cambodian Annam, and

¹ Or *An-nan* = the southern country.

² = "The Royal City of the East."

³ Or Aloes-wood.

each of the provinces into which the country is divided is under a military governor. Every man between the ages of 18 and 60 years is liable to military service. Confucianism and Buddhism are widespread, but the belief in various patron saints appears to be the popular superstition. Christianity, introduced by the Portuguese Jesuits in the seventeenth century, has also taken root. Though the language differs entirely from that of China, the Chinese characters are employed.

5. The country appears to be deficient in arts and manufactures, but as shipbuilders the Annamese excel. A considerable trade is maintained with China; but this is mainly in the hands of resident Chinese traders, though the king of Annam himself is said to be the chief merchant; rice, sugar, raw silk, cinnamon, cardamoms, betelnuts, ivory, and gums, are the largest exports. *Hue*, the capital city, lies near the middle of the coast of Cochin China, and was strongly fortified by the French engineers, to whose aid the former sovereign mainly owed the extension of his kingdom in the beginning of this century. *Hanoi*, the chief town of Tong-King, lies on the Song-Ka river about 100 miles above its mouth, near *Kesho*, and is a busy trading place. By treaties concluded with France in 1874 and 1876, *Hai-Phong*, the port of Hanoi, and *Quinhon* (Kwi Nhon), in Cochinchina, were opened to the trade of the world. It is anticipated that an important trade route may be opened along the Song-Ka river to Yunnan and southern China.

LOWER COCHIN CHINA.

1. The support given to the ruler of Annam by Louis XVI. in the latter part of last century was to be repaid by a cession of territory to France, but the troubles which followed his acquisition of Tong-King, and of the greater part of Cambodia on the south, prevented the fulfilment of this scheme. His successors from 1819 onward persecuted the French missionaries, and thus gave occasion for a French expedition against Annam in 1857. After Saigon, the chief fort at the mouth of the Me-khong river, had been blockaded for two years, a peace was concluded in 1863, by which the provinces of Lower Cochin China¹ were ceded to France. In 1867 three western provinces voluntarily submitted to French authority.

2. The French possession is a wide plain extending on both sides of the great delta of the *Me-khong* (short for Menam-Khong), and cut through by its innumerable channels. Its excessive moisture, combined with the great heat, brings about wonderful fertility in vegetation and in animal and insect life, but at the same time makes the country extremely unhealthy. Three belts are recognised; first the mangrove-covered swamps next the sea; then a reed-covered and marshy plain, and lastly a somewhat higher forest-covered zone. The variety of produce is very great; rice is produced in enormous quantity, with cotton, tobacco, ground nuts (arachis), sugar cane, maize, indigo, teak, and many other fine timber woods, gums and fruits; yet the spices of the islands are not found here.

3. The inhabitants are chiefly Annamese; but Chinese, Cambodians, and Malays are largely intermixed; the Europeans are only a few hundreds in number. The country is divided into six provinces which are subdivided into prefectures and cantons. *Saigon*, the capital, near the site of a former extensive

¹ Nam-ky = the southern district.

Chinese settlement, is situated centrally on one of the smaller navigable branches of the Me-khong delta, about 40 miles from the sea. It is a modern town with numerous European buildings, including a citadel and marine storehouses. *Mytho*, *Bienhoa*, and *Vinhlong*, also on a branch of the delta, are rather great bastioned citadels on the marshes, than towns in the ordinary sense. The twelve islets of the *Pulo Condor* group, about 80 miles south-east of the delta in the China Sea, also belong to France.

CAMBODIA.¹

1. One of the consequences of the French occupation of Lower Cochin China was the release of the remaining portion of the once great kingdom of Cambodia from its dependence on Annam and Siam, and its formation into separate kingdoms under the protection of France. It lies between Siam, Annam, and French Cochin China, on three inland sides, the south or south-western side extending to the Gulf of Siam; and it occupies a space somewhat larger than Ireland.

2. All the eastern portion of it is an alluvial plain through which the great Me-khong river takes its way, overflowing its banks during the five rainy months of the year, brought by the southerly monsoon. From the abundance of its rice supply this used to be considered the great granary of Annam. Westward the country rises somewhat higher and is densely forest-covered; from this direction the Me-khong is joined by the overflow of the *Tale-Sap* or *Bien-hoa* lake, an expanse upwards of one hundred miles in length, which lies partly in Siam partly in Cambodia, and along the shores of which many families settle in the dry season to take the fish with which it abounds.

3. The original inhabitants of Cambodia were the *Moi* and *Loi*, whom we have noticed as occurring in a part of Annam, a branch of the Champas, and who appear to be related both to the Malays and the peoples of southern India. The population, however, is now a very mixed one of representatives of all the surrounding countries. *Udong*, the former capital, lies near the centre of the country, and is a walled town; *Panom-peng*, at the confluence of the river from the Tale Sap with the Me-khong, is the present capital of Cambodia, and is inhabited chiefly by Chinese, whose boats line the river banks, and who carry on an extensive traffic. This meeting-point of the river highways is also connected by canal with the only port of Cambodia, that of *Kamput*.

MALACCA.²

1. The southern portion of the Malay Peninsula, excepting the British possessions, which we shall afterwards notice, remains in the hands of the Malays, who have here occupied the maritime districts, driving the aboriginal tribes into the interior.

This independent region, occupying a space about as large as Ireland, is a land of green forest and jungle, full of wild animals, such as elephants, tapirs, tigers, and large apes, crocodiles, and snakes; its climate is one of excessive

¹ This appears to be the Malay name: the native one is *Srok-Khmer*.

² Probably from *Maha-lanka* = Great Island.

moisture, for the rains are carried over it by both monsoon winds, from the China Sea on the north-east, and from the Indian Ocean on the south-west. Fine timber and canes, sago, peppers, and gutta-percha are among its rich vegetable products, and its mineral wealth is so great that the name Ophir was given to one of its eastern mountains by the early European settlers. The most important of the Malay states in this region are those of *Perak* and *Salangore* on the western slope of the peninsula, and of *Pahang* and *Johore* on the side next the China Sea, each under its native sultan. The Malays, whose characteristics we have previously described, seem to have overrun these regions after the twelfth century, arriving hither by way of Sumatra. They were converted to Mohammedanism in the thirteenth century, but are not strict in its observance, though Arabic is their sacred language. The black tribes whom they have pressed into the interior forests are called by them *orang-utan*, "men of the woods," or *orang-bukit*, meaning mountaineers.

BRITISH STRAITS SETTLEMENTS.

2. *Penang*, or Prince of Wales Island, and the strip of the east coast of the Malay peninsula opposite it, called *Wellesley province*, form the most northerly of the "Straits Settlements," or the British possessions on the great highway of trade between the Indian Ocean and the seas of China. The island was taken by the East India Company in 1785 from the Sultan of Quedah. The mainland province was acquired in 1800. The province derives its name from the fine betel nut or Penang palm; and both districts are exceedingly productive in timber and spices, as well as in cultivated sugar and indigo. The population is chiefly Malay and Chinese, the chief European settlement being that of *George Town*, on the west coast of Penang Island.

3. *Dinding*, a strip of territory on the west coast between Penang and Malacca, together with the adjacent islands of *Pancore*, has recently been ceded to Great Britain; the area of this new acquisition may be compared with the Isle of Wight. There are a few fishing villages along the coast, but it has hitherto been chiefly used as a pirates' haunt.

4. *Malacca*, on the narrower part of the strait, a territory about as large as Berkshire, was ceded to Britain by the Dutch in 1825. It exports large quantities of tapioca (manioc or cassava starch) and sago, and has valuable tin mines. Its chief town and port of the same name dates back from the time of Albuquerque (1509), but its former commercial importance has greatly declined.

5. *Singapore Island*,¹ named from its "city of the lion" at the southern extremity of the peninsula, was bought from the Malay sultan of Johore in 1819, and has become the great depôt of British trade in the south China seas. The city is well laid out and divided into European, Chinese, and Malay quarters, and is strongly fortified.

EAST INDIA ISLANDS.²

1. The islands which form the East Indian Archipelago stretch round in a wide curve enclosing the China Sea, from the Straits of Malacca to the Channel of Formosa. Besides the larger Sunda

¹ Native, *Ujong Tanna*, or Land's End.

	Area in square miles.	Population.
² Sunda Islands and Moluccas	656,000	27,300,000
<i>Philippines</i> and <i>Sulu</i> Islands	114,000	7,500,000

Islands—Sumatra, Java, Borneo (itself nearly as large as Britain and France together), Celebes, Mindanao, and Luzon in the Philippine group—there are countless smaller islands grouped round these, all enclosing sheltered seas. These facilities of safe navigation and the regularity of the monsoon winds have brought about an essentially maritime condition of life. Swift-sailing proas and towns of boats on the estuaries of the rivers are characteristic of this region. Excepting the tropical forest lands of Brazil, there is no other part of the earth in which vegetation attains equal luxuriance, or in which animal life is more exuberant. The great curve formed by the islands circling round Borneo is also a belt of great volcanic activity. On most of the islands volcanic cones have been thrown up. Many of these are constantly active; and earthquakes are of very frequent occurrence. The naturalist Wallace has shown that the archipelago is remarkably divided into an Asiatic and an Australian region.

Shallow seas lie between Farther India, Sumatra, Java, Borneo, and the Philippines, showing that these islands are joined by a submarine plateau with the continent, and must have become separated in comparatively recent times from the mainland. The elephant and tapir of Borneo and Sumatra are the same as the Indian species; the wild ox of Java also occurs on the continent; and some of the long-armed apes are common to the Malay peninsula and the islands. But none of these animals could have swum over the wide arms of the sea which now separate the islands from the continent, so that their presence shows clearly that the islands and the mainland must have been one continuous tract in former times. But along a line passing through the strait which separates the islands of Bali and Lombok, east of Java, and thence through the Strait of Macassar, between Borneo and Celebes, through the Sulu Sea, and between the Philippines and the Moluccas to the south of them, a deeper trough of the sea shuts off all the eastern islands; and these as evidently belong to the *Australian region*. Australia has neither apes nor tigers, deer nor oxen nor elephants, nor indeed any of the quadrupeds which are found in the Indian area. Instead of these it has marsupial or pouched animals, such as the opossum and kangaroo. In place of pheasants and woodpeckers it has brush-turkeys and cockatoos. On crossing the narrow strait from Bali to Lombok this complete contrast of animal life is at once observable; and between Borneo and Celebes the difference is equally striking, the monkeys which abound in the forests of the former island giving place to the prehensile-tailed opossums in the latter.

The zoological dividing line indicated above also corresponds very nearly with the limit to which the Indo-Malay races have spread eastward. In Sumatra, Java, Borneo, and the Philippines, as well as in Celebes, the Malays now occupy the coast lands, and have driven the aboriginal Negroid tribes into the interior mountains and forests. In the islands eastward of these, however, the Papuan races remain in possession.

2. In a political point of view, the greater part of the southern or main group of islands are *Dutch colonial possessions* divided into a number of provinces or residencies. The rich island of Java has become the most important and the most completely developed of these possessions.

The Philippine group, in the north, is for the most part under *Spanish* authority. The *British* hold Labuan Island on the north-west coast of Borneo; the *Portuguese* have still a small territory in the eastern island of Timor; and there remain under *independent* native rulers the kingdom of Achin on the north of Sumatra, and the kingdoms of Sarawak and Bruni in northern Borneo.

3. *Sumatra*.—The great island of Sumatra, lying opposite our settlements in the Strait of Malacca, is larger than Britain and Ireland together. It extends fully a thousand miles from north-west to south-east, lying diagonally and equally across the equator. Mountains and high plateaus traverse it throughout its length on the western border, reaching a height of 12,140 feet in Mount Indrapura, a little north of the equator. Mount Ophir or Telaman Peak (9940 feet) and Merapi are also prominent summits. The larger rivers flow down eastward through the wide alluvial forest-covered plains. Rice, maize, coco-nuts, sago-palms, sugar-cane, cotton, and tobacco, and all sorts of tropical fruits, are among its vegetable products, but black pepper is its staple export, with rice and camphor.

Malay Mohammedans, and tribes which are probably aboriginal, form the greater part of the population, which reaches nearly four millions. The Dutch claim all the territory south of the third parallel of north latitude, and this area is directly or indirectly under their rule, though the number of resident Europeans is very small, and large parts of the interior of the island are as yet unexplored. In the north the warlike Achinese are still independent, notwithstanding long-continued efforts at their subjugation by the Dutch, though some of the coast districts have been occupied by their troops.¹ The Dutch territory is divided into the five provinces of, the West Coast (which also includes the islands of Babi, Nias, the Batu and Mantawi groups, lying off it), Bencoolen, the district of Lampong in the south, Palembang, and the East Coast Residency.

On the west coast the chief ports and towns are *Padang*, the capital of the west coast government, lying right and left of a small river of its name, founded in 1660, when the Portuguese were driven from a neighbouring factory; *Tapanuli* northward, and the pepper port of *Bencoolen* southward. *Palembang*, on the Musi river, fifty miles up from its mouth, and *Siak*, towards the north-east, are the chief places of Dutch trade in the eastern region of Sumatra.

4. Off the north-east coast of Sumatra, filling the mouth of the Strait of Malacca, south of our island of Singapore, lies the *Riou Archipelago*, a richly fertile group, now formed into a Dutch Residency. They carry on a large trade in pepper and timber with the people of the surrounding seas, through their capital town and seaport of Riou, on an islet off the south coast of the largest island, named Bintang. This is also the residence of the Sultan of Riou, now a dependent of the Dutch Government. The island of *Linga*, immediately south of the equator, off the east coast of Sumatra; the *Tumbelan* group of islets, midway between Singapore and the coast of Borneo; and the *Anamba* Islands, farther north, and the *Natuna Islands*, in the China Sea, are also under the control of the Dutch Resident of Riou.

5. Farther south than the Riou Archipelago, separated by a strait from the east coast of Sumatra, opposite Palembang, lies the large, thickly-forested island of *Banca*, 130 miles long, and beyond, midway across the Sunda Sea to

¹ 1877. Samalangan and Merdu.

Borneo, the smaller island of *Billiton*. Both of these Residencies are famous for their tin mines, which have been worked since 1709 for the Dutch Government, chiefly by Chinese miners. They yield about 10,000 tons of metal every year.

6. *Java*.—This most valuable of the islands extends through a distance of more than 600 miles, from Sunda Strait, which separates it from Sumatra, on the west, to Bali Strait, in the east; but at some points its north and south coasts are only 50 miles apart, and its area is not quite so large as that of England. Throughout its length it is traversed by a chain of high mountains, nearly 40 of which are volcanic cones, some extinct, others emitting smoke, and still others subject to fierce eruptions. Mount *Semeroe*, the highest of all, reaches 12,150 feet.

Java is the most fertile and productive, and the most populous island in all the tropical region of the globe. The hot region, or that which lies beneath an elevation of 2000 feet, embraces the greater portion of the island, and is admirably suited to the cultivation of rice, maize, indigo, sugar-cane, cloves, pepper, and vanilla. The temperate region extends up the mountain slopes, and over the plateau of Western Java, between elevations of about 2000 and 4000 feet, and is the best ground for coffee and tea plantations, besides having a delightful climate, well suited to Europeans. The cool regions above 4500 feet are restricted to the slopes of the volcanic cones. The rains are brought by the westerly monsoon from November till March; easterly winds bringing dry weather for the rest of the year.

It is mainly due to the energy of the Netherlands Trading Company that the cultivation and resources of the island have been so highly developed, and that its population has become so great. The native Javanese are of Malay race, in general a quiet, industrious people. Mohammedanism was introduced in the fifteenth century, and has taken root all over the island, to the almost total exclusion of the former Brahminical religion, the monuments of which, temples and statues, are found deeply hidden in the forests. Chinese have settled here in large numbers, as well as Arabs and Hindus; but the whole 18½ millions of people in the island are under the control of only twenty-eight thousand Europeans. Though two states are still nominally under native Sultans, the whole island belongs to the Dutch, and is under a mild despotic government; it is divided out into 23 Residencies, including the island of Madura, off its north-east coast; a system of compulsory labour on the part of the natives is enforced by native officials or "Regents," acting under the Dutch governors. *Batavia*, towards the western extremity of the north coast of Java, is the capital of all the Dutch East Indies, as well as of this island, and is a great seaport and trading place, connected by telegraph line with Singapore. *Bantam*, nearer the Strait of Sunda, was the first settlement of the Dutch, made in 1602; but is now of little importance. It is supposed that the variety of domestic fowl, great in soul if little in body, was brought from this place.

Samarang is a great port, near the middle of the north coast, and has its European, Chinese, Malay, and Arab quarters. A railway across the island unites Samarang with *Djokjokarta*, near the south coast, passing by way of *Sarakarta*, the most considerable place in the centre of the island, in the midst of a highly cultivated district. *Surabaya*, on the strait which separates Madura from the main island, and *Probolingó*, farther east, are the chief outlets of the eastern part of the island.

7. *Borneo*.—The immense island of Borneo,¹ after Australia, Greenland,

¹ The Portuguese form of the name of Bruni or Brunel, a country on the western coast of the island.

and New Guinea, the largest piece of isolated land on the globe, lies centrally in the East Indian Archipelago, between the China Sea on the north-west, the Sunda Sea on the south, and Macassar Strait leading to the Sulu and Mindoro seas on the east. It stretches out more than 800 miles from north to south, and is more than 600 miles wide from east to west. Not much is yet known of its interior regions, but chains of mountains seem to traverse its length from north-east to south-west in the direction of the island of Palawan, northward of it, while, from its central region, other ridges extend east and south-east towards the eastern angles, enclosing wide lowlands, which, if the sea-level were raised, would become gulfs like these of the adjacent island of Celebes. Mount *Kini Balu*, or the "Chinese widow" (13,670 feet), in the extreme northern corner of the island, is the highest point known as yet. Its chief rivers are the *Kapuas*, or river of Pontianak, flowing south-west from the central mountains; the *Murong*, or river of Banjermassin, flowing south to the Sunda Sea; and the *Koetei*, flowing eastward to the Strait of Macassar.

Magnificent forests of iron wood, teak, and the gutta percha tree, and many others, besides palms and canes, cover the land; here the ourang-outang builds his nest of branches, and though the elephant is wanting, there are tapirs and wild swine, deer and buffaloes, in abundance.

The human inhabitants, estimated at nearly two millions in number, are for the most part *Dyaks*, a taller and more muscular people than the Malays, though evidently of the same race, in a great number of small tribes. They are partly enslaved by the Malays in the maritime districts; partly free pirates; partly barbarian nomads, in the interior mountain region. There are besides these many Mohammedan *Malays*; large numbers of *Chinese* colonists, living on the coasts as traders, or employed in the mines; and on the east, a number of colonists from Celebes.

The greater part of the island is nominally under Dutch rule, the independent native kingdoms of Sarawak and Bruni and the territory of Sabah being confined to the north and north-western districts.

8. The Dutch portion, which comprises a number of tributary native kingdoms and rajahships, is divided into the two residencies of the *west coast*, and of the *south and east coasts*.

Pontianak, near the mouth of the *Kapuas*, is the capital of a native kingdom of its name, and a busy port, and the seat of the Dutch Resident of the west coast division. Dependent on Pontianak is the state of *Landak*, in which was found the great diamond of the Rajah of Matan, the largest known (weighing 367 carats). Farther north than Landak is the territory of *Montado*, which has many gold mines.

Banjermassin corresponds to Pontianak in its position near the mouth of the chief river of the southern watershed, and in being the capital of the residency of the south and east. The chief trading place of the south coast, however, is the seaport of *Taborniau*, southward of Banjermassin.

Samarinda, on the *Koetei* river, is the most important place on the eastern side of Borneo.

9. *Sarawak*, a native kingdom along the southern shores of the Bight of Datu, on the west coast, is of interest as having been governed for twenty years, from 1841 onward, by the adventurous Sir James Brooke or Rajah Brooke, who did much to civilise the country, and to abolish piracy in the neighbouring seas.

The independent Malay kingdom of *Brunei*, from which our name of the island is derived, occupies all the north-western slope to the China Sea, and its sultan resides in a town of the same name on the coast of a wide northern bay. Opposite this bay is the islet of *Labuan*, which was taken possession of by

Britain in 1846, on account of its valuable coal beds, and from its convenient position as a naval station in the South China Sea.

10. *Sabah*.—A territory in the extreme north of the island of Borneo, with a thinly scattered population, lately ceded by the sultans of Bruni and Sulu to an English Company, who pay a yearly subsidy. The greater part of the interior is covered with virgin forest, and is mountainous. There is a plain near the coast from 15 to 20 miles wide. The climate and soil is favourable to the production of coffee, cocoa, tapioca, and tobacco. Sago is largely grown. Coal has been found near the sea-shore. There is a capital harbour at Sandakan in the north-east.

11. *Celebes*.—The strangely shaped island of *Celebes*, running out in four great arms, corresponding to four mountain ranges which extend from a central nucleus, embracing wide gulfs of the sea, is somewhat larger in area than England and Wales, though no part of it is more than 70 miles from the sea. It is also rich in all the products of this luxuriantly fertile region, but its surface is less forest-covered, more available for pasturing herds of wild buffalo, of domesticated cattle, and of the best horses of all the archipelago. Its trade with Singapore and China is mainly in cotton, birds' nests, tortoise-shell, tobacco, and sago. Gold, tin, copper, iron, and coal, are known in the south.

It is more populous, in proportion to its area, than Borneo; in the central interior region the little-known tribes of the Turayas seem to be akin to the Dyaks of Borneo. The coast peoples, called *Bugis*, of lighter yellow-brown colour, have evidently settled here from other parts.

Celebes is claimed entirely by the Dutch, and is divided by them into the Residencies of *Macassar* (or Mangkassar), which embraces the southern peninsula, and extends also over the island of Sumbawa, with part of Floris in the lesser Sunda chain; of *Menado*, which reaches over the northern peninsula, and includes besides the Sangir and Talaut islets, which reach out towards Mindanao on the east of the Sulu Sea. A third division, extending round the eastern gulf of Tomori, falls within the Residency which has its head-quarters in the Moluccas.

Macassar, or Vlaardingen, on the western coast of the southern peninsula, facing the Sunda Sea, is the chief place in Celebes and the depôt of trade with Java and Singapore. Menado, the capital of the northern Residency, lies near the northern extremity of the island. The Sangir islands within its government are remarkable for their volcanoes. Mount Aboe, in the Great Sangir, has frequently caused great devastation by its violent eruptions.

12. *Lesser Sunda Islands*.—The chain of the Lesser Sunda Islands, which stretches east in the line of Java, the islands of *Bali* and *Lombok*, both mountainous and volcanic, the latter containing a peak which is one of the highest points of all the archipelago, form a separate Residency. The capital is the seaport of *Ampanam* on the strait between the islands.

13. Next to Lombok is the island of *Sumbawa*, nearly as large as Wales, forming a dependency of the Residency of Macassar. It is a very fertile forest-covered island, yielding abundance of teak and tamarinds, and has on its northern coast the great volcano of *Tambora* (9040 feet), which destroyed 12,000 people in its great eruption of 1815. Its inhabitants are Malay Mohammedans, only nominally subject to the representative of the Dutch Government, who lives at *Bima*, on the north coast.

14. Farther on we come to the long island of *Floris*, or Mangerasi, and *Sumba* or the Sandalwood Island, south of it, and from that by the chain of smaller islands, of which *Lomblem*, *Pantar*, and *Ombai* are the chief, to the great island of *Timor*, the largest of the Lesser Sunda chain, inhabited chiefly by Papuans or negritos. All these, excepting the western part of Floris and the eastern third of Timor, which forms the only remaining

possession of Portugal in all the archipelago, are grouped under the Residency of Timor, the capital of which is the fine port of *Koepang* at the south-western extremity of that island. *Dehli*, a seaport on the north coast of Timor, is the chief point from which the Portuguese exercise some authority over the native rajahs of their part of Timor.

15. *Moluccas*.—The most easterly groups of islands belonging to the Dutch are collectively named the *Moluccas*, and are portioned out into three Residencies.

(1) The first of these, named from its central island of *Amboyna*, embraces the larger island of *Buru*, west of it, and the western portion of *Ceram*. (2) The second, called the Residency of *Banda*, includes the eastern half of *Ceram*, and reaches over the central group of the *Banda* islets to the *Kei* islands and *Aru*, south of New Guinea, and to *Timor Laut* and the *South-Western Archipelago* between that island and Timor. (3) The third, named the Residency of *Ternate*, includes the large northern island of *Halmahera* or *Gilolo*, between Celebes and New Guinea, and reaches westward round the Gulf of Tomori in Celebes, and eastward to embrace *Waijaunne*, *Batanta*, *Saluatty*, and *Misol*, near New Guinea, as well as the western peninsula of that great island, which we shall afterwards have to notice in the Australian region. The *Moluccas* proper are the small islands clustering round *Ternate*, west of *Halmahera*, which has the Dutch port of *Orange*, and is the most important central point of all this region of the archipelago. But the name *Moluccas*, or *Spice Islands*, has spread out from these to embrace all the islands which yield the beautiful *nutmeg* tree, resembling our pear tree, with deep green glossy leaves, giving the *nut* and its covering *mace*, and the small evergreen which gives the aromatic flower buds called *cloves*.¹

16. *Philippine Islands*.—The northern apex of the region of the East Indian Archipelago is formed by the great group of the Philippine Islands, which, we may remember, were discovered by Magellan during his great voyage of circumnavigation. They include upwards of a thousand separate pieces of land, but the two islands of *Luzon* in the north of the group, and of *Mindanao* in the south of it, are by far the largest. Each of them is considerably larger than Ireland. Between these there are seven islands of considerable dimensions. These are *Mindoro*, *Palawan*, *Panay*, *Negros*, *Cebu*, *Leyte*, and *Samar*. Still smaller are the central islands of *Masbate* and *Bojol*.

The islands generally present magnificent mountain scenery, and have many volcanic cones. That of *Albay*, in the south of *Luzon*, is 8500 feet in height, and constantly emits smoke and steam. Great forests of ebony, iron wood, cedar, and sapan wood, clothe most of them, and the variety of their fruits is immense. Rice, sugar, tobacco, hemp, cacao, and coffee, are the chief cultivated products. It is remarkable that all the larger beasts of prey are unknown, though birds of brilliant plumage and reptiles abound.

Three seasons are recognised—the cool and dry season, beginning in November, when the north-east monsoon sets in; then the *sear*, or period of heat and drought, beginning in March and continuing till May, when the heat is almost unbearable; and the rainy season, beginning with the south-west monsoon in June, and lasting till September or October.

The people of the islands, besides the comparatively few Spaniards and Chinese settlers, fall into two divisions, first the aboriginal *Abetas* or *Ettas*, called *Negritos* by the Spaniards, black-brown in colour, with woolly hair and regular features, living in independent tribes in the interior, whither they have been pressed by the second, those of Malay origin, who now occupy the maritime districts, the best known of whom are the *Tagalas* and *Bisays*.

¹ From French *clou* = a nail.

Some have adopted Christianity, and others are Mohammedans, but the majority are idolaters, or have no form of religion. The islands are divided by the Spanish into provinces of several classes under military commandants and political governors. *Manila*, on the west coast of Luzon, famous for its cigars, called cheroots, is the capital of the Spanish Philippines, and carries on an extensive trade, sending out sugar, hemp, tobacco, cigars, and coffee, as far as Britain westward and the United States eastward. *Yloilo*, on the island of Panay, is the second seaport of the group, the outlet of the best hemp-growing district; *Cebu*, on the island of its name, on which Magellan was killed; *Zamboanga*, on the south-west peninsula of Mindanao; and *Sual*, north of Manila, on the west coast of Luzon, are also considerable seaports of the group.

17. The *Sulu Islands*, extending between Mindanao and the north of Borneo, consisting of the three groups of Basilan, Sulu proper or Solo, and the Tawi-Tawi islands, are now only in part under the Sultan of Sulu, for the Spaniards occupied some of them in 1876, and incorporated them with their colony of the Philippines. The Sultan of Sulu, whose possessions have thus been restricted, claims the southern portion of the island of Palawan.

18. Farthest north of all the East Indian islands lie the five *Bashee Isles*, which were discovered by Dampier in 1687, and of which the Spaniards took possession in 1788. They maintain a small establishment on Grafton Island.

MOHAMMEDAN ASIA.

BALUCHISTAN AND AFGHANISTAN.¹

1. The eastern half of the great plateau of Iran or Persia, marked out by the mountain chains which run west and south from the great Hindu Kush range, and covered for the most part with bare infertile deserts and narrow valleys and gorges, is occupied by the Afghans and Baluchis. It is a rugged and poor country, devoid of what we should call roads, inhabited by tribes who are brave, but ignorant, suspicious, and irascible, most of whom are fanatical Mohammedans, disliking the presence of Europeans both as foreigners and Christians. In the political geography of Asia, however, this is a region of great interest and importance, as it lies now between the two great modern powers of the continent, Britain in India and Russia in Central Asia, whose influence is ever expanding. Its two great passes, the Khaibar to Kabul in Afghanistan, and the Bolan pass to Quetta in Baluchistan, may be called the north-western gates of India.

BALUCHISTAN.²

2. **Physical Features.**—The prominent features of Baluchistan, a territory somewhat larger than Great Britain, are the *Hala* and *Kurkleki* mountains, which extend northward from Karachi on the west of the delta of the Indus to the Bolan pass, marking the edge of the plateau above the plains of Sindh; and the ranges which run parallel to the shores of the Arabian Sea on the south,

	Area in sq. miles.	Population.
¹ Baluchistan	106,300	350,000
Afghanistan	278,600	6,145,000

² The country of the Baluchis, whose name is derived from Belus, King of Babylon, the Nimrod of Scripture.

descending by pastoral terraces to the low-lying coast desert of Makran. Within these borders, on the plateau, bare hill ridges and sandy deserts extend over all the interior towards the frontiers of Afghanistan and Persia. The plateau has no rivers, but in the rainy season torrents rush down the mountain gorges. Winter on the highland is cold and rude, the summer very hot; the low coast desert of Makran then becomes one of the hottest districts on earth. One fertile and pleasant district, however, is included within the limits of Baluchistan; it is that of Kachhi-Gandava, which reaches down from the plateau on the north-east, to include the well-watered slopes of the mountains and part of the plain of the Indus at their base.

3. **People.**—The few inhabitants are the *Baluchis*, who are possibly of Semitic origin, and who are said to have migrated from the neighbourhood of Aleppo, and the *Brahui* tribes, now the dominant race, who seem to be of Mongol descent, their short round figures and flat features differing entirely from those of the Baluchis, and their language having much in common with that of the people of the Deccan. Both are robust and active, inferior to the Afghans in appearance, but equal in fighting power.

4. **Division and Chief Towns.**—The divisions of the country generally recognised are those of Kalat, Sarawan, Shawl or Quetta, and Kachhi-Gandava on the north-east; Jhalawan, Luz, and Makran in the south. The Khan of *Kalat*, whose mud-walled capital in the mountains of Kurkleki, 7000 feet above the sea, was stormed by the British in 1839, is the principal chieftain and the nominal ruler of Baluchistan, maintained and subsidised by Great Britain. In winter he descends to reside at *Gandava*, in the Indus plain. *Sonmiani*, north-west of Karachi, is the seaport of the province of Luz.

5. In 1877, as a guarantee for the maintenance of communications with Baluchistan, the British re-occupied the small town of *Quetta* or Shawl, near the north-eastern corner of Baluchistan, which they held for a time in 1842. It is a mud-walled place, 5540 feet above the sea, and about 20 miles north-west of the head of the *Bolan Pass*, which is a narrow and wild gorge about 51 miles in length, walled in by precipitous rocks, and infested by freebooters. In 1839 a column of the British army took six days to traverse it. A railway has been constructed to its foot, and is to be continued to Kandahar.

AFGHANISTAN.

6. The mountainous country reaching from Baluchistan northward to the Oxus river and the low-lying Turkoman desert beyond the Hindu-Kush; and from the frontier of Persia on the west to the skirt of the Panjab, to Kafirstan, and the Pamir plateau on the east, takes its name from the Afghan tribes who form the greater part of its population. It extends about 500 miles each way, and includes a greater area than that of France.

7. **Physical Features.**—Four-fifths of its surface are covered with mountains and valleys, which have a general direction west and south-west from the huge central knot of the Pamir towards the more level deserts of the interior of the plateau of Iran. Along the northern border extends the vast alpine range of the *Hindu-Kush*¹ (over 20,000 feet in elevation), which bears this name for nearly 400 miles, from the Pamir to the *Haji-kak Pass* (12,190 feet) between Kabul and Bamian. Beyond this pass the range is continued westward, and is called the *Koh-i-Baba*, a snow-clad range 18,000 feet in elevation

¹ More accurately Hindu-Koh.

which is prolonged still westward by the *Safid Koh*, and by other mountains which form the northern edge of the plateau of Iran, ultimately joining the Elburz range south of the Caspian. On the eastern side, next India, the high *Sulaiman Mountains* mark the edge of the highland, and the approaches to it from India are by four passes round or across this range; by the *Khaibar Pass* (3375 feet), round its northern extremity and up the valley of the Kabul river to the Khurd Kabul Pass, ten miles from the city, where General Elphinstone's army was destroyed in 1841; by the *Shutargardan Pass* (10,900 feet) at the head of the Kurram valley; by the *Gomul Pass*, across the centre of it; or by the *Bolan Pass*, through northern Baluchistan, turning its southern extremity. Between the Hindu-Kush and the Sulaiman ranges many high masses run out south-westward, enclosing between them many well-watered and fertile valleys, as well as high, cold, treeless, pastoral table-lands, which merge in the south-west into the bare deserts of Baluchistan and eastern Persia.

8. As a whole this country of mountain and valley is well watered. The *Kabul river* flows eastward between the base of the Hindu-Kush and the *Safid Koh*, as the northern mass of the Sulaiman mountains is named, to join the Indus at Attock. Rafts descend it to Jalalabad, and it is probably navigable for boats as it approaches the Indus. From the opposite side of the Koh-i-baba the Hari-rud (or Heri river) runs westward past Herat, and turns northward through the marginal heights of the plateau to descend into the Turkoman desert in the north, and there to be drawn off in irrigating canals. Its north and south course forms the boundary with Persia. The valleys, between the interior chains which ramify south-westward over the country, supply the head streams of the variable *Halmand*, which fills the lagoons of the great Seistan swamp or Hamun in the centre of the plateau, terminating its course there. It is swollen out by the melting snows of the mountains in May and June, but shrinks at other seasons to a narrow channel. The northern river, the *Oxus*, receives a number of small tributaries from the northward slope of the Hindu-Kush, near its head in the Pamir, but farther west, where it enters the low-lying desert, the streams flowing north towards it fail to reach its channel, being drawn off altogether in canals for irrigation in this dry region. Such are the *Dehas*, which terminates in the district round Balkh, on the border of the desert; the *Nari*, or Sangalak, which becomes similarly spent in the vicinity of Andkhui, and the larger clear and rapid stream of the *Murgh-ab*, which is exhausted in fertilising the oasis of Marv.

9. *Climate*.—The climate of a region so diversified in elevation is naturally very various; the heights are very cold; the deep valleys very hot. As a whole the climate is dry, cool, and bracing, and its brave and strong people testify to its healthiness; the year is divided distinctly into seasons of spring, summer, autumn, and winter, the last beginning in December, when the streets of Kabul are blockaded with snow, and all business is at an end for three months. Kabul enjoys a moderately warm summer, but at Jalalabad, in the same valley lower down, the heat of June becomes intolerable.

10. *Products*.—The aspect of the thinly-peopled country is generally bare and rugged; only some of the valleys and lower mountain slopes are terraced and cultivated. In the mountain forests the pine, oak, cypress, and walnut are characteristic trees, and many of the European fruits grow wild. The rose, jasmin, and hyacinth, adorn the gardens. Among wild animals the lion is occasionally seen, but the leopard is common, as well as wolves, hyenas, jackals, and foxes, bears in the forests, wild sheep in the eastern mountains, and antelopes in the plains. The horses of Afghanistan are excellent, and are brought in numbers to India. Broad-tailed sheep appear in large droves; goats and dogs are also plentiful. Some of the rivers have alluvial gold, and copper and iron are abundant in the north and east.

11. **People.**—Though the whole country within the limits we have been describing is called Afghanistan, it is very far from being a united state, and the allegiance owed to the frequently deposed Ameer of Kabul is of the lightest and most fluctuating kind ; its limits include many tribes which are more or less independent of one another, and often at war, uniting or allying themselves it may be against a foreign enemy. Along the borders next the Panjab the *Pathan*¹ tribes claim absolute independence, and are under no rule whatever except that of their own chiefs ; they have always been a source of disquietude to the British Government, frequently closing the passes to trade, and no fewer than twenty-eight expeditions have been undertaken against them. The most important of these border tribes are the *Yusufzais*, who hold the hills north and west of Peshawar ; the *Afridis*, in several clans on the eastern slopes of the Safid Koh south-west of Peshawar ; and the *Waziris*, the robbers of the Gomul Pass and other parts of the central Sulaiman range. North of the Kabul valley the *Kafirs*² occupy the slopes of the Hindu-Kush. These are fine mountaineers, with fair complexion and blue eyes ; gross idolaters, professing a sort of Hinduism, but remarkable for their truthfulness and good faith. The *Afghans* proper, who are finely-built, long-bearded men, with Caucasian features, style themselves Beni Israel, or sons of Israel, claiming descent from Saul, and taking their name from his grandson Afghana ; but the theory of their Hebrew origin, based on this tradition, is doubted, for their language has no relationship to any of the Semitic dialects, but is clearly a member of the great Aryan family. Perhaps the most powerful of the central Afghan clans is that of the Ghilzais, occupying the highlands north of Kandahar (others are the Durani, Kakars, and Povindahs). The *Hazarahs*,³ inhabiting the wild highlands of the north of Afghanistan, are again a widely different race ; they are of Tatar or Mongol descent, pastoral in occupation. Beyond the Hindu-Kush, towards the Oxus, the provinces of Turkistan included within the boundary (Wakhan, Badakshan, Kunduz, and Balkh) yield obedience to the Ameer only when he can back his demands by force. Besides the Afghan tribes, Persians, or Tajiks, are numerous in the west, Hindus in the east.

12. **Divisions.**—The great divisions of the country are those of *Kabul*, in the centre ; *Herat*, on the west in the valley of the Hari-rud ; *Seistan*, round the head of the Hamun Swamp (now almost entirely within the Persian boundary) in the south-west ; *Damaun*, or “the skirt,” in the east along the base of the Sulaiman range. In 1873 it was agreed by the Cabinets of London and St. Petersburg that the northern frontier of Afghanistan should be considered to be the Oxus river from the Siri-kul (lake) in the Pamir plateau as far as the post of Khoja Sala, where the route from Balkh to Bokhara crosses the river, and that it should be marked farther westward by a line drawn across the desert from Khoja Sala to the Persian frontier near Sarakhs on the lower Hari-rud. The limit thus indicated includes, within Afghanistan, a number of small states grouped as the province of *Afghan Turkistan* ; but these states, as we have seen, are only slightly connected with the government of Kabul.

13. **Government.**—The history of Afghanistan, as we have seen, has ever been that of disorders, factions, and usurpations. In recent times the central state of Kabul had been increasing in power. Balkh, in the north,

¹ The term *Pathan*, by which the Afghan tribes are known to the natives of India, is a corrupted form of *Pukhtun* or *Fushtaneh*, a name conferred, it is said, on a leader named Kish, by Mohammed himself, when he made a pilgrimage to Medina to examine into the new religion, which was subsequently adopted by the greater number of his countrymen.

² Or infidels, also known as *Kohistan* (“mountaineers”).
³ So named from the Persian word *Hazar*, signifying a thousand, in reference to the multitude of their tribes.

was added to it by conquest in 1850; Kandahar, on the south-west, was joined to it in 1854; Herat, on the west, the scene of frequent disputes with Persia, was finally taken possession of by the Afghans of Kabul in 1863; and when Dost Mohammed, the father of Shir Ali, died in that year, the British Government recognised the latter as ruler of Afghanistan. Soon afterwards, however, two usurpers in succession ruled at Kabul, Shir Ali being exiled meanwhile to Turkistan. With the aid of his son Shir Ali regained his throne; but the recognition given to his predecessors by the Indian Government, the British arbitration which gave Seistan to Persia, and the British occupation of Quetta, had alienated his good-will, and in 1878 a British ambassador was refused admittance to his territory; in November of that year war was declared, and the invasion of Afghanistan undertaken by the British. The result of this expedition was a Treaty, concluded in 1879, called the Treaty of Gandamak, by which the British Indian frontier was advanced to the head of the Khaibar Pass, the summit of the Shutargardan Pass at the head of the Kurram Valley, and to the Khojak Pass at the head of the Pishin Valley north of Quetta. Towards the end of 1879, in consequence of the murder of the first English resident under the new treaty, a punitive expedition advanced into the country, and occupied the towns of Kabul and Kandahar. Shir Ali had in the meantime been succeeded by his son Yakub Khan, on whose resignation (October 1879) Abdurrahman, until then an exile in Russian Turkistan, was recognised as Ameer.

14. Trade.—The industries of Afghanistan, besides the little agriculture of the valleys, are chiefly the weaving of coarse woollen cloths and the manufacture of weapons. Caravans passing through from India bring shawls, cottons and muslins, turbans and silks, besides sugar and spices; to India they take ponies, furs, and fresh and dried fruits; European wares reach Afghanistan both by India and through Turkistan from the north. Some rich Afghan merchants possess thousands of camels.

15. Chief Towns.—The chief towns of Afghanistan are *Kabul* in the north-east, 6400 feet above the sea, in the most fertile part of all the country, surrounded by orchards and gardens. *Ghazni*, 85 miles south-west, standing on a rock 280 feet above the adjacent plain, and 7730 feet above the sea, protected by walls and towers, is a notable fortress, which was stormed by the British in 1839, and again taken in 1842. Before the twelfth century it was the capital of the great empire of the Ghiznevide kings. *Kandahar*, in the upper basin of the Halmand, is a populous town, the great mart of traffic between Persia and India, 3490 feet above the sea. It is at present occupied by a strong British garrison. *Herat*, in the north-west, is a well-fortified town. *Bamian* lies beyond the Haji-kak Pass, which is a very important one, as it is the only one in the high ranges north of Kabul that would be practicable for artillery. It is remarkable for its extensive architectural remains and cave dwellings, artificial excavations of ancient date, which are still occupied.

AFGHAN TURKISTAN.

16. *Badakshan*.—The most easterly of the small states north of the Hindu-Kush range included within Afghan Turkistan is that of *Badakshan*. It lies for the most part in the deep valley of the *Kokcha* river, a tributary of the Oxus. This valley is so fertile that it sends out rice and wheat to the surrounding countries, and pastures large numbers of horses, cattle, and famous camels. Within this territory also the beautiful lapis lazuli, sapphires, and rubies are found. Its chief centres of population are *Jirm*, a cluster of hamlets in the valley of the Kokcha, and *Faizabad* on the Oxus.

17. Tributary to it is the province of *Wakhan*, higher up the valley of the

Oxus, on the south-western border of the Great Pamir steppe, inhabited by the Wakhis, an intelligent and good-looking race, fond of arms and sport, whose "Mir" or chief resides at *Kila Panja* in the valley. A considerable transit trade passes along the upper Oxus valley through Badakshan and Wakhan, between Eastern and Western Turkistan over the Pamir routes. The easiest approach to this region from India is that by the Chitral valley and over the *Baroghil Pass* at its head.

18. *Kunduz*.—Next to Badakshan westward lies *Kunduz*, formerly an independent Khanate, now tributary to Afghanistan, like the former. Its valley is also richly productive of grain and fruits. The Mir or Khan of this territory, and with him the ruling part of the population, are Uzbeks, a Mongolian race; the rest of the people are Tajiks. The capital, *Kunduz*, near the tributary of the Oxus, of the same name, is a small mud-built place in the midst of gardens.

19. *Balkh*.—Beyond Kunduz we reach the more extensive state of *Balkh* (or Bactria), reaching from the Koh-i-baba range down its northern slope to the Oxus. Here we are approaching the borders of the great Turkoman desert, and the low country becomes bare and stony, though the upper valleys are well watered and fertile. The natives of Balkh are Uzbeks of the Shiah sect of Mohammedans. The capital of the same name, situated where the waters of the Dehas river from the Koh-i-baba are spread out and spent in irrigating canals just before reaching the Oxus, is a ruinous place, but has had a great history. It is still called by the orientals Uem-ul-Bilad, or the "mother of cities;" in the beginning of the period of the middle ages it was the great centre of Mohammedan civilisation in Central Asia, and was then an immense city, fully thirty miles in circuit. It was the birthplace of Zoroaster, and the capital of the Greek kingdom of Bactria, founded by the successors of Alexander the Great.

20. *Andkhui*.—About 75 miles west of the ruinous Balkh lies *Andkhui*, also in the terminal oasis of a mountain stream, the centre of another small territory which long formed an independent Khanate, inhabited by Turkomans, Uzbeks, and Tajiks.

21. *Maimana*.—Lastly, south-westward of Andkhui we come to the small state of *Maimana*. The most direct route from Herat to Samarkand and Bokhara passes through it by a difficult passage over the Murghab river. It has a warlike Uzbek population, partly settled in villages, partly nomadic, who have long maintained a sturdy independence.

INDEPENDENT TURKISTAN.

1. Between the southern borders of the Russian conquests in Turkistan and the limits which have been recognised as the western frontier of Afghanistan, there still remains a belt of territory which is independent of either of the great powers which have been gradually approaching one another in this region of Asia. The nearest points of Russian and Afghan territory are now, however, only about 60 miles apart.

	Area in sq. miles.	Population.
Khanate of Khiva	22,320	700,000
„ of Bokhara	83,980	230,000
„ Karategin	8,315	100,000
Turkoman country	79,725	450,000
	<u>194,340</u>	<u>3,280,000</u>

KHIVA.

2. The north-western portion of this independent belt is occupied by the diminished khanate of *Khiva*. Here the only inhabited and fertile district is that which lies along the left bank of the lower Amu or Oxus where it approaches the Sea of Aral. This has been rendered fruitful by the energy of the people in irrigating the land by canals drawn from the river, so that it yields corn, fruits, and silk in abundance. Its settled inhabitants are *Uzbeks*, the dominant people of this region, besides *Turkomans*, *Kirghiz*, and *Persians*, who are subjects of the despotic Khan, who, however, acknowledges himself a vassal of Russia. The trade of the country is carried on by camel caravans of from one to two thousand animals, which cross the steppes to *Orenburg* or *Astrakhan*, or take the shorter way to *Krasnovodsk*, on the Caspian, whence goods are shipped. The capital city of *Khiva*, on one of the main canals drawn from the Amu, is a place of from three to four thousand mud-built houses, surrounded by a wall, and containing a citadel shut off from the rest of the town. Russians only are free to trade in *Khiva*, and the navigation of the Amu is now free to their vessels alone.

BOKHARA.

3. Adjoining *Khiva* on the east, and reaching south to the Oxus, is the once powerful khanate of *Bokhara*, which, though politically inferior to *Afghanistan*, is recognised as spiritually supreme by the surrounding Mohammedan states. Excepting along the banks of the Oxus, and where the *Zarafshan* river, drawn off in canals, enters the land on the north, there is little cultivable or inhabited land, almost all the remaining area being covered with sandy steppes, in which wells become of the utmost value. In the districts which are reached by water, however, cotton and silk, corn and fruits, are grown; large numbers of cattle and broad-tailed sheep are also reared; and trade is busily carried on by large camel-caravans passing to *Astrakhan* by way of *Khiva*, to *Siberia* northward, and eastward to *China*.

The dominant people here also are the active and intelligent *Uzbeks*; but there are also found *Afghans* and *Arabs*, *Jews*, *Nogais* or *Russian Tatars*, *Kirghiz*, *Tajiks*, *Hindus*, and *Turkomans*. The prevailing religion is *Mohammedanism*, and the "Mir," besides being a military despot, is supreme in religious matters also.

Bokhara, the capital, the foundation of which is ascribed to *Alexander the Great*, stands in the fertile region gained by the division of the *Zarafshan* river into a multitude of irrigating canals, before it reaches the Oxus. Its walls, four miles in circuit, have eleven gates. Within, its bazaars are enlivened by the many varied costumes of the many different peoples who come hither to trade. *Karshi*, south-east of the capital, is also a great trading place; and the main southern routes into *Afghanistan* cross the Oxus at *Karki* to *Maimana*, and at *Kilif* into *Balkh*.

The mountainous pastoral district of *Karategin*, on the western slope of the *Pamir Steppe*, formerly an independent territory, passed under the protection of the ruler of *Bokhara* at the time when *Russia* took possession of *Kokan*.

TURKOMAN TERRITORY.

4. The remainder of the independent zone, between the Oxus and the northern frontier of *Persia*, reaching west to the *Trans-Caspian* province, is occupied, for the most part, by the great waste called the *Kara Kum*, or

"black sands." Round the borders of this sandy desert live the Turkomans, generally nomadic, but occasionally occupying themselves with a little agriculture, on the banks of the streams which flow down from the Persian and Afghan highlands to be spent in the desert. They are Tatars, and own no government; are warlike and rude, menacing each traveller and caravan. Their most powerful tribe is that called the Tekke, who occupy the ancient town of *Marv*, in the oasis formed by the Murghab, which is the most important centre of population in the Turkoman territory. Quite recently this tribe has been severely punished at the hands of the Russians, who now occupy the western half of its ancient territory.

PERSIA.¹

1. The kingdom of *Persia* or *Iran* occupies the plateau lands which rise between the Caspian and the Persian Gulf of the Indian Ocean. It is separated eastward, from Afghanistan and Baluchistan, by an artificial frontier drawn northward from the coast of the Indian Ocean, past the Hamun swamp, to the river Hari-rud, which loses itself in the sands of the Turkoman desert in the north; and westward, from Mesopotamia, by a line drawn from the Shat-el-Arab, or the united water channel of the Euphrates and Tigris, at the head of the Persian Gulf, northward, across the mountains of Kurdistan, to Mount Ararat. In extent Persia measures nearly five times the area of the British Isles; but its population does not exceed that of Ireland alone.

2. **Relief and Landscape.**—The only lowlands of Persia are the narrow and arid belt of coast which skirts the Persian Gulf and the Indian Ocean in the south, and that which lies along the southern margin of the Caspian, which is covered with vegetation, and has a damp and relaxing climate. Between these the plateau rises to a general elevation of 2000 to 3000 feet above the sea, its northern margin, next the Caspian, being marked out by the range of the *Elburz* mountains, which culminate in the highest summit of the country (Mount Damavand, volcano, 18,469 ft.), and its southern by the parallel ranges of the *Kohrud* Mountains, and the chains of Kurdistan, Farsistan, and Laristan, which run from north-west to south-east on this side of the plateau. These ranges have been as yet little explored; some parts of them rise perhaps to a greater general height than the Elburz range, and some of their summits, seen from long distances, never lose their snowy caps. The high plains which stretch out between the northern and southern mountain ranges, occupying the interior of the plateau, are for the most part barren and sandy wastes, scored and streaked with patches of green oases, cultivation being only possible by artificial irrigation. The mountain valleys and ravines are much more fertile, and afford bright and picturesque prospects.

3. **Rivers and Lakes.**—The rivers flowing down the outer slopes of the plateau are few and of no value at all for navigation. The *Kizil Uzen* and *Atrek* are the largest of those which flow to the Caspian from Persia; the *Karun* and *Karkhah*, the largest streams which flow down the south-western slopes to the Euphrates, in the Mesopotamian plain. The north-eastern boundary river, the *Hari-rud*, coming from the mountains of Afghanistan, loses itself in the desert sands almost as soon as it has descended from the plateau. In the north-western corner of the country, between the mountain

¹ Area, 686,000 square miles; population, 7,000,000.

called the Sehend Koh, which rises south of the town of Tabriz, and the mountains of Kurdistan, lies the high basin of the lake of *Urumiah* or Urmia, the surface of which is nearly 4000 feet above the sea. It is nearly as extensive as Lancashire, and its waters are so salt that no fish can live in them. The large lakes of *Niris* and of *Shiraz* lie within the folds of the south-western mountains of Farsistan; and, on the eastern border, partly in Persia partly in Baluchistan and Afghanistan, is the great expanse called the *Hamun*, which extends from north to south for a length of about 180 miles. This basin, which appears to have been at one time covered, as a great lake or swamp, by the water brought to it by the Halmand river from the mountains of Afghanistan, is now a grass-covered level, defined in outline by clay-cliffs and reeds, a few pools of water appearing only at the mouths of the streams which formerly filled it.

For irrigation the plains of central Persia are dependent on the uncertain streams which flow down inward from the surrounding mountains, and which are led off by "kanats" or underground canals, or by surface channels, to water the fields. When rain or snow are deficient on the mountains, there is a scarcity of water in the plains; and, when both are wanting, a famine is the result.

4. *Climate*.—The climate of Persia is of the excessive type, the temperature of the plateau region ranging from a few degrees above the zero point of the thermometer to as high as 112° F.; the prevailing winds there are, from the north-west, the cooler dry wind; and from the south-east, the rain-bearing wind of Persia. What the younger Cyrus is reported to have said regarding the climate, "that people perish with cold at one extremity while they are suffocated with heat at the other," is true of the country.

In the *Dushtistan*, as the lowland along the Persian Gulf is called, the heat of autumn is excessive, winter and spring delightfully fresh, and the cold never intense. In the arid region of the eastern interior of the plateau the heat of summer is most oppressive; the winter cold and piercing. The Caspian slope, and the lowland along its shores, on the contrary, have a warm rather than hot summer and a mild winter, with frequent and heavy rains.

5. *People and Religion*.—The inhabitants of Persia are divisible into two chief classes, the settled agriculturists, merchants, and artisans, and the nomadic or pastoral tribes. The former class is chiefly composed of the *Taujiks*, the descendants of the ancient Persian race, with an admixture of Turkish, Arab, Armenian, and other foreign blood. These, from being long a subject race, have lost much of their independence of character, and are often servile and cunning. To the nomadic or pastoral tribes belong the *Turkomans* of the northern borders, the *Kurds*, *Luurs*, and *Arabs* of the south-west, each tribe living under its hereditary chief. Besides these a number of separate communities are to be found, such as that of the Nestorian¹ Christians of the mountains of Kurdistan, at present a poor and illiterate people; of *Jews*, *Gypsies*, and of *Negroes* from the Zanzibar coast of Africa.

The greater part of the people of Persia are Mohammedans, and chiefly of the Shiah sect, and their priesthood has many orders. Among the Shiahs a pilgrimage to the shrine of the Imam Reza, at *Mash-had*, in the north-east of Persia, is more essential than one to Mecca or Medina. The chief exceptions are the Armenians and Nestorian Christians before mentioned, and the few *Guebres* or *Parsees* remaining in Karman and Fars, and retaining their purity of race and religious faith. As a rule, the rich and middle classes of Persia, despite abilities, are sensuous and dissipated, while the poorer classes have

¹ Nestorius, patriarch of Constantinople, was deposed by the Council of Ephesus in 431 A.D. His sect, repressed in the Roman empire, found shelter in Persia.

barely sufficient sustenance. The famine of 1870 destroyed upwards of half a million of lives. In comparison with other countries of Asia, education is advanced among the upper classes of Persia. In the colleges Persian and Arabian literature are studied, and the sciences, largely mixed with astrology, are nominally taught.

6. Products, Trade, and Manufactures.—Where the dry soil of Persia is supplied with water by irrigation, it is exceedingly fertile; the wheat it yields is as fine as any in the world; cotton, rice, sugar-cane, and tobacco, are other large crops. The wines of Shiraz are celebrated in Eastern poetry; mulberries are extensively cultivated, and silk is an important product. With the exception of salt from Lake Urmia, and the salt incrustations of the desert shores of the plateau, the mineral products are insignificant; yet the beautiful turquoise stone is found in the Elburz mountains of Persia.

The horse and camel are the chief domestic animals,—the former larger and handsomer, though less fleet, than that of Arabia, is celebrated as the finest in the east. Immense herds of sheep and of goats, whose soft hair is woven into fine fabrics, are pastured on the mountain slopes of the south-west. Wild animals, among them the lion and leopard, wolves, tigers, cats, jackals, and boars, are most numerous in the northern forests of the Elburz Caspian slope. The rivers flowing to the Caspian are rich in fish, especially the sturgeon, quantities of which are exported to Russia.

The manufactures of Persia are famous, though limited in extent, and include hand-made carpets, silk stuffs, shawls, fine arms, and sword cutlery. Trade is of little importance, and is carried on by means of caravans which come from the interior of Asia, and through the towns of *Karman* and *Yezd*, *Shiraz*, and *Isfahan*, in the south; and from the route by *Mash-had* and *Sabzwar* from the east to *Tehran*, and thence to *Tabriz*, in the north-western corner of the country, where the greater part of the exchanges of goods are effected. *Tabriz* is the emporium for the productions not only of Persia, but of northern India, Samarkand and Bokhara, Kabul and Baluchistan. European merchandise, chiefly cotton cloths, come by way of Constantinople and Trebizond to *Tabriz*, to be distributed thence by the returning caravans over the east. The trade of the Caspian at the Persian port of *Anzali* (the port of Rasht and of *Tehran*), and *Barfrush*, and at their own naval and trading station on the islet of *Ashurada*, in the south-east angle of the Caspian, is monopolised by the Russians. The maritime trade of the southern coast at the ports of *Bushire*, and *Gombroon*, or *Bandar Abbas*, on the Strait of Hormuz, is carried on mainly by British vessels and Arab dhows.

Though the roads or tracks through Persia are utterly neglected, a system of telegraph lines has recently been established by Europeans, and the first postal service, also conducted by Europeans, was opened in January 1877. By it mails are now carried from Julfa, the Armenian suburb of *Isfahan*, to *Tehran*, *Tabriz*, and the port of Rasht on the Caspian.

7. Government.—The Government of Persia, like that of Turkey, is based on the precepts of the Koran. The “Shah-in-Shah,” or king of kings, is absolute ruler, and master of the lives of his subjects, as far as his will is not opposed to the accepted doctrines of Islam. He is regarded as the vice-regent of the prophet.

Under him the government is carried on by a ministry in seven departments—the grand vizier being the chief member of the executive, and directing the foreign policy of the government; the provinces into which the country is divided are placed each under a *Beglerbeg*, or civil and military governor, usually a member of the royal family. The revenue of the districts within the province are taken partly in kind, as rice, wheat, silk, etc., collected by a *Hakim* or lieutenant-governor; in the towns the citizens elect a *Ket*

Khodah, or chief magistrate. An army of about 30,000 men is maintained; and a reserve force, three times as numerous, is allowed to engage in agriculture and other pursuits.

Notwithstanding its ancient civilisation, and the contact of Europeans, almost the same barbarism prevails in Persia as in other Mohammedan countries. The oppressive taxation of the labouring classes, the insecurity of property, internal disorders, and the closing in of Russian and British influence round it, have destroyed the power of the kingdom. The army cannot even restrain the marauding propensities of the wandering tribes within the Persian frontier.

8. **Divisions and Chief Towns.**—The divisions of the country are :—The three Caspian provinces of Ghilan, Mazandaran, and Astrabad, in the north; Irak Ajemi, Khorassan, and Seistan, in the central plains; Adarbaijan, Ardalan, Luristan, Khuzistan or Arabistan, Farsistan, and Karman, extending over the parallel mountain ranges of the west and south-west; and Makran, sloping to the coast of the Indian Ocean on the south. *Tabriz, Kasvin, Isfahan*, and *Shiraz*, have in turn been the capital cities of Persia. At present *Tehran*, on a broad plain at the south-west base of Mount Damavand, is the seat of government. Black mud walls and ill-paved thoroughfares are the rule in Persian towns, the windowed or terraced fronts of the houses being built for the inner courts, not for the world without. Handsome mosques and solid caravanserais there may be, but everything is irregular, and ruins and new buildings are side by side, and dirt and discomfort everywhere.

About forty miles north-east of Shiraz are the marvellous ruins of *Persepolis*, the ancient capital, once "the glory of the East," to the embellishment of which Darius, Xerxes, and Artaxerxes contributed; it was destroyed by Alexander the Great in his march of conquest.

ASIATIC TURKEY.¹

1. **General Description.**—This large territory, the whole western extremity of Asia, is very irregular in contour and relief, and may be compared in extent to about fourteen times the area of England and Wales. It has a very long coast-line, being bounded on the north by the Black Sea and the Sea of Marmara, west by the Ægean and Mediterranean Seas, and the Red Sea, whilst its south-eastern angle occupies a considerable portion of the shores of the Persian Gulf. Its remaining boundaries on the east and south are formed by the long ranges of mountains that serve to separate it from Persia, and by the Syrian Desert, which gives a very indefinite limit to the empire in the direction of Central Arabia. The chief physical divisions are Asia Minor, Armenia, and Kurdistan on the north; Mesopotamia, Babylonia, Syria and Palestine, the Hejaz,² and Yemen, on the south. These are the names in common use amongst Europeans, but they are not officially recognised in the country. This land, the early home of the human race, and the scene of so many great events in the very dawn of history, has been now for a long period slowly but surely falling to decay under a weak and corrupt government.

¹ Area, 729,000 square miles; population, 16,150,000.

² Hejaz = Land of pilgrimage, the Holy Land of Mohammedans.

2. Islands.—The islands belonging to Turkey are chiefly situated in the *Ægean*, and are collectively known as the Archipelago of the White Sea, *Jezireh Bahr-i-Sefid*. The principal islands are *Thasos*, with a population of 6000 souls ; like all the islands, chiefly Greek ; it has a barren soil, but the hills are covered with fir timber. *Samothrace*, with an area of about 30 square miles, and a population of about 2000. *Imbros*, population 3000, noted for its abundance of game. *Lemnos*, area 150 square miles, population 12,000, exports corn, grapes, and figs. *Tenedos*, a small island close to *Besika Bay*, and near the mouth of the *Dardanelles*, population 5000, exports a famous red wine. *Mitylene*, the birthplace of *Barbarossa*, population 60,000, fertile soil ; olive groves clothe the shores, and pine forests the mountains. *Chios*, area 400 square miles, population 65,000, exports mastic, silk cocoons, olive oil, and wine. *Samos*, a tributary beyship under a Christian Prince.¹ *Icaria*, population 8000, chiefly charcoal-burners. *Patmos*, a barren island with a population of 4000, famous as the place of *St. John's* banishment, and the scene of the *Apocalyptic vision*. *Cos*, area 150 square miles, population 16,000, is a fertile and picturesque island, producing corn, oil, wine, and silk. *Rhodes*, area 420 square miles, population 40,000 ; contains the chief town of the vilayet of the islands, with a good port ; is healthy and fertile, and exports honey, wax, oil, figs, and grapes ; was the place of residence of the order of the *Knights of St. John*. Here also stood the celebrated *Colossus of Rhodes*. *Cyprus*, a rich and fertile island situated at the eastern end of the *Mediterranean*, has an area of 3723 square miles, and a population of 186,000, two-thirds of whom are Christians and speak Greek. It is traversed by two distinct mountain ranges, one parallel to the north coast, the other to the south. From neglect, want of drainage and tillage, it is covered in many places with fever-breeding marshes. It is historically famous for its copper and other minerals, and contains many ruined towns. *Nicosia*, in the centre of the island, is the capital. The other places worth naming are *Larnaca* and *Limasol* on the south coast ; *Papho* on the west, *Kyrenia* on the north, and *Famagusta* on the east. It suffers from occasional drought, has no harbours, and, with great agricultural capabilities and mineral and forestal riches, has but little commerce. Under the convention of 1878 it is administered by the British Government.

3. Relief.—The surface may be readily divided into three sections, the first on the north, including *Asia Minor*, *Armenia*, and *Kurdistan*, being everywhere mountainous ; the second to the south, including *Mesopotamia*, *Babylonia*, and part of *Arabia*, an almost uninterrupted plain. The third, to the west, including *Syria*, *Palestine*, the *Hejaz*, and *Yemen*, a long range of sea-bordering hills and mountains.

The whole of the first section is one great plateau of varying elevation, buttressed north and south by considerable mountain ranges, and culminating in the great peak of *Ararat*, 16,916 feet above sea-level. Rising from the shores of the *Black Sea*, the long north range, clothed with forests of valuable hard wood, commences on the east at an elevation of 9000 feet, and gradually declines westward in average elevation to 3000 feet, but rises in peaks south of the sea of *Marmara* to 5941 (*Mount Olympus*) and 5393 feet (*Mount Ida*). Towards the *Ægean* coast the plateau has been very much broken into by the rivers which enter this sea, but spurs run out to the coast in steep bluffs of

¹ See page 275.

2000 and 3000 feet. On the south the Taurus range may be said to terminate in a bluff headland at the south-western extremity of the peninsula. Rising almost immediately to a height of 5695 feet in the Baba Dag, it serves as the waterparting for the south coast drainage as far east as the meridian of Tarsus; separating the short streams that fall into the Mediterranean from the continental or lake drainage of the plateau, and reaching in the Bulghar Dag a height of 11,390 feet. Here it throws off the range of the Anti-Taurus to the north-east, and here also is found the famous pass called now Gulek Boghaz, the *Cilician Gates* of ancient history. From this point its continuation eastward appears to be very much broken and interrupted until it reaches the Akhyr Dag north of Marash, when it again resumes its character as a great range, and reaches the Euphrates at the great bend south-west of Kharput. South of Marash the twin chain of Amanus runs off to the south-west, and under the names of Durdun Dag and Alma Dag (Cilician and Syrian Amanus), embraces the plain and gulf of Iskenderun (Issus). The Syrian branch, reaching the Nahr-el-Ahsy (Orontes) at Antioch, becomes the northern head of the sea-bordering ranges which forms our third section. Crossing the Euphrates, and proceeding eastwards under the local names of Alindshi Dag, Khandush Dag, and Erdosh Dag, the prolongation of the Taurus range forms the waterparting between the Murad-chai, and the streams feeding Lake Van and the upper Tigris, and reaches the ridge, which forms this part of the Turco-Persian boundary, near the recently ceded valley of Kotur. Starting from the knot of mountains which occupies the great bend of the Euphrates in E. long. 39°, and running in a south-easterly direction, the ridge of Karajah Dag (Mons Masius) separates the tributaries of the upper Tigris from those of the Khabur; at Mardin this range bends a little more easterly, and under the name of Jebel Tur reaches the Tigris about 70 miles above Mosul. Crossing the river, and still proceeding in the same easterly direction, it ultimately reaches the boundary near the peak of Rowandiz, 10,120 feet.

Between this latter range and the eastern prolongation of the Taurus Mountains south of Lake Van, lie the range of Jebel Judi, and the confused mass of the mountains of Julamerik in the centre of the Kurdish country, the home country of the Carduchi of Xenophon.

The Anti-Taurus, leaving the main range as already mentioned near the Cilician Gates, forms the waterparting between the Kizil Irmak and the Euphrates as far as Eghin, where it crosses the latter river and becomes the southern limit of the plains of Erzingian and Erzurum, culminating in the Bingöl Dag 11,550 feet. Thence under the names of Kasbel Dag, Sherian Dag, and Aghri Dag, it reaches and forms part of the new boundary with Russia, and then joins the Persian boundary on Mount Ararat.¹

The whole of the plateau of Asia Minor bears evidence of volcanic action, but the south-western portion is covered with volcanic cones, and it is here that we find lakes of salt and brackish water with no outlet to the sea, surrounded by marshes more or less salt, and abounding in traces of volcanic action.

The second section comprises the plains of Mesopotamia, Babylonia, and part of Arabia, which appear to rise gradually from the sea-level in the Euphrates valley, to a height of over 2000 feet on their western edge. The only hills worthy of mention in this great pastoral country are those which, running in a continuous line in a south-west and north-east direction, bisect the great plain. Commencing in the Anti-Lebanon Range at Jebel-esh-Sheikh (Mount Hermon), and passing just northward of Palmyra, they are locally

¹ At the western extremity of the Anti-Taurus Range stands the loftiest peak of the peninsula of Asia Minor, the great conical Arjish Dag or Argæus, an exhausted volcano, 12,600 feet (Chihachef; 13,150 according to Tozer); on the north and north-east slopes are extensive glaciers.

known as Jebel Ruak, Jebel Amur, Jebel Bisshari, Jebel Abdularis, and Jebel Sinjar; under the last name the Tigris at Mosul is reached, and the direction and character of the range changes. Turning south-eastwards it now becomes the skirt of the mountain country, and reaches the boundary range under the name of Kara Dagħ. South of the Kara Dagħ, the Hamrin Hills connect the boundary range, Pusht-i-Koh, with the Tigris above Tekrit, but they are of mean elevation and are unimportant.

The third section consists of two longitudinal belts, one with a slight westerly trend bordering the Mediterranean, and the other with an easterly trend bordering the Red Sea. Commencing on the north at Antioch, where our first section terminates, we find the Jebel Nusarieh rising abruptly and presenting a bold front to the sea, sinking at the entering in of Hamath, near Homs on the Nahr el Ahay, but rising again immediately in Mount Lebanon to more than 10,000 feet; after crossing the Nahr el Kasimiyeh (Leontes), and leaving a deep chasm where the waters break through to the sea, the rounded hills and little ridges of Galilee carry on the mountainous belt to the Merj-ibn-Amir or plain of the Kishon; this plain rises very little above sea-level, and affords easy access to the country behind. South of this plain is Jebel Kurnul (Carmel), and with slight interruption the mountains of Ephraim and the plateau-like hill country of Judaea lead on to Jebel Mugrah, at the end of this mountainous belt, where it descends abruptly into the desert of Et Tih. At the eastern base of this irregular mountain mass, and separating it from the western edge of the great Arabian plain, lies the remarkable depression of the Jordan Valley and Dead Sea—a physical curiosity perfectly unique, the surface level of the waters being 1292 feet below the level of the Mediterranean. This longitudinal valley is continued north by the valley of the Nahr el Ahay, and south by the broad Wady el Arabah, which rises with a gentle ascent to the eastern arm of the Red Sea at Akabah. East of this long depression lies, in the north the Anti-Libanus, culminating in Jebel esh Sheikh (Mount Hermon) 9383 feet, and in the south the Jebel esh Sherah, culminating in Jebel Harūn (Mount Hor) 4000 feet. Between these extremities there are no very distinct ranges, the mountains of Gilead and Moab end in steep precipices on the edge of the Jordan Valley, and the volcanic group of Jebel Hauran, and the peculiar basaltic tract of El Lejah, stand out conspicuously from the great plain.

The mountains which border the eastern shore of the Red Sea are of much greater elevation than the portion of the longitudinal belt just described. Near Medina, on the parallel of 25°, Jebel Shomer leaves the coast range at a right angle, and runs across the peninsula of Arabia forming the northern boundary of *Nejd* or the Highland; near Mecca, on the parallel of 21°, the coast range appears to culminate in a point said to be nearly 14,000 feet high, and here the Aared or Tamarieh Mountains, running across the peninsula parallel to Jebel Shomer, pass south of Er Riad, and form the southern boundary of the *Nejd*. Throughout Yemen the range averages 6000 feet, but little is definitely known. Probably there are many points of great elevation in this division.

4. Rivers.—The most important rivers of Turkey in Asia are the Euphrates and Tigris, the former being navigable for river steamers for 1100 miles, and the latter for more than 600 miles. The Euphrates, “the great river,” is formed by the junction of two streams, the Kara Su¹ or Frat and the Murad Chai.¹ The first rises amongst the mountains of Armenia, in the plateau of Erzurum; the latter in the high valley of Alashkert, near Bayazid. After the union of these waters the great river breaks through the Taurus

¹ Su, Chai, and Irmak = river.

chain, and descends by a deep and perilously navigable defile to Birejik. Hence it flows through an alluvial valley, cultivated in a few places as far as Ana; from this point to Hit there is no cultivation, but here the corn country—the only country in the world where corn is indigenous—is entered, which continues all the way to the Shat el Arab. The only tributary of any importance is the Khabur, which falls in on the left bank after a course of nearly 200 miles. The whole length of this great river, to its junction with the Tigris at Kurnah, is 1600 miles.

The Tigris rises on the southern side of the Taurus chain near Kharput, and crossing the plateau of Diarbekr and bursting through the mountain barrier that supports that plateau on the south, enters the plain a few miles south of Mosul. It approaches to within twenty miles of the Euphrates at Bagdad, and after making a wide sweep to the east joins that river at Kurnah, and the united rivers—under the name of Shat el Arab—flow for 120 miles in a broad full stream, with flat marshy banks, to the Persian Gulf at Fac.

The principal tributaries of the Tigris fall in on the left bank. They are the Sert, the Greater and Lesser Zab, and the Diyaleh. Rising on the flanks of the Zagros Mountains, they drain the whole of Turkish Kurdistan.

The head waters of the Aras (Araxes), a tributary of the Caspian Sea, come within Turkish territory; rising in the Bingöl Dagħ south of Erzurum, it passes through the portion of Armenia recently ceded to Russia, and for great part of its course serves as the boundary between Russia and Persia. Of the rivers forming the Turkish portion of the Black Sea basin, the most easterly is the Choruk Su, which rises in the hills to the south-east of Baiburt, and falls into the sea near Batum; its lower course is through that part of Lazistan which has been transferred to Russia by the Berlin Treaty. West of Trebizond is the Korshut Su, which, rising on the plateau of Gumush Khana, falls into the sea near Tireboli. The Kizil Irmak (Halys) and the Yeshil Irmak (Iris), the largest rivers of the peninsula of Asia Minor, both rise in the Gemin-Beli-Dagħ at the northern extremity of the Anti-Taurus range. The Kizil, after a winding course of about 700 miles through picturesque valleys, breaks through the defile of Kara Tepe, and enters the sea by a deltoid mouth. The Yeshil has a much straighter east and west course, but turns abruptly north to descend the maritime slope, and, forming a delta at its mouth, enters the sea by several channels. The next stream is the Soghanly Su, which falls into the sea east of Ereğli. Then comes the Sakaria (Sangarius), a fine stream with its source in the uplands of Angora. It is formed by the union of the Engur Su with the Saïd Chai. It has a tortuous course of 300 miles, and enters the sea forty miles west of Ereğli.

The streams flowing into the Sea of Marmara are the Adyrnus, the Sukurlu, and the Khoja Chai (Granicus). The tributaries to the *Ægean* are numerous and of great historical interest. Just south of the Dardanelles and north of Besika Bay is the Mendere Su—the famous Scamander—which rises in Mount Ida and flows through the plain of Troy. The Gediz or Sarabat Chai (Hermus), has a length of about 200 miles; traversing first a dreary volcanic region, it runs through the pleasant fertile valley of Kassaba, and falls into the Bay of Smyrna. The Kutchuk¹ Mendere (Cayster) rises in the Boz Dagħ (Tmolus), has a length of seventy miles, and passing through a splendid valley it enters the sea near the ruins of Ephesus. The Buyuk² Mendere rises near the group of brackish lakes that occupies the south-western portion of the plateau, and after a course of nearly 250 miles waters the fine plain of Aidin, and falls into the sea near the ancient port of Miletus. All these rivers bring down

¹ Kutchuk = little.

² Buyuk = great.

large quantities of silt, and the ancient ports at their mouths are now choked up, and, in some cases, lie miles behind the present coast-line.

The rivers that fall into the Mediterranean from the southern slopes of the Taurus are numerous, but not important. The Gök Su (Calycadnus) has a course of more than 100 miles, and enters the sea in the Gulf of Tarsus. The Sihun Chai (Carus) and Jihun (Pyramus) both rise on the flanks of the Anti-Taurus and run through the Taurus range in deep and precipitous channels, afterwards meandering through a perfect sea of verdure, in the rich alluvial plain of Adana, they enter the sea between Tarsus and Iskenderun.

The rivers draining into the Eastern Mediterranean are the Nahr-el-Ahsy (Orontes) and Nahr-el-Litany (Leontes), which rise in the splendid upland vale of El Bukâa (Coele Syria), and run in opposite directions at the back of the Lebanon range. The former passes through Antioch, and falls into the sea near its port of Suedia (Seleucia); the latter reaches the sea, through a chasm in the range, near Sur (Tyre). The only other river of importance here is the Jordan, which, rising in several springs on the flanks of Mount Hermon, and passing through the lakes Bahr¹-el-Huleh (Merom) and Bahr Tubariyeh (Gennesareth), plunges down through the great depression called El Ghor in a tortuous course of nearly 200 miles, and ends in the Bahr Lût (Dead Sea). The Abana and Pharpar, the rivers of Damascus, deserve mention in this connection. Rising on the slopes of Anti-Libanus and Hermon, they flow down and irrigate by innumerable artificial channels the rich and fertile plain, producing a verdant paradise of fruit and flowers around that Old World city.

The Turkish provinces, Hejaz and Yemen, on the eastern shores of the Red Sea, are destitute of rivers. The coast is bordered by a barren sandy plain of varying width, called the "Tehamah" or "low country."

5. **Lakes.**—Lake Van, the largest, has an extreme length of 80 miles by a breadth of 30 miles, and lies in a hollow in the mountains at an altitude of more than 5000 feet above sea-level. It has no outlet and few tributaries, its waters are salt but clear and blue like the sea, it contains shoals of fish and abounds with waterfowl, ice forms on its surface in winter, but it has a delightful climate. It is navigated by barges of rude construction. Tuz Göl,² the largest of the group of salt lakes on the plateau of Asia Minor, is 45 miles long by 10 broad, with extensive salt marshes on its western edge. Beishehr Göl about 20 miles long by 5 broad, the twin lake of Egerdir about 30 miles by 6, and the Buldur 17 miles by 4, are the principal lakes of a picturesque group that occupies the south-western edge of the plateau. Lake Isnik (Ascania), on whose shores the arbutus grows luxuriantly, and the lakes of Manias and Abullonia, lie just south of the Sea of Marmara. Bahr Tubariyeh (Galilee or Tiberias), a basin of volcanic origin, lies at the head of the Jordan Valley, is 13 miles long by 7½ broad, and 653 feet below the level of the Mediterranean. Bahr Lût (Dead Sea), the most remarkable sheet of water in the Old World, is hemmed in by cliffs 1500 and 2000 feet in height, rising almost perpendicularly from its shores. It is 1292 feet below the Mediterranean, the deepest lake-basin in the world, is 46 miles long by 9½ broad, receives several considerable tributaries, but has no outlet; is intensely salt and contains springs of bitumen, for which reason it was named Lacus Asphaltites. The water is nauseous to the taste and smell, and so buoyant that the human body will not sink in it. Sulphur and rock salt, lava and pumice, abound along its shores, and its aspect is dead, barren, and desolate. Bahr Nedjef is a large fresh-water sea, situated about 20 miles from the right bank of the Euphrates, south of Hillah, is 40 miles long by about 10 broad, and is

¹ Bahr = lake or sea.

² Göl = lake.

surrounded by red sandstone cliffs. On its banks stands Meshed Ali, one of the holy cities of the Shiah sect of Mohammedans.

6. *Climate.*—The climate of Turkey in Asia is as varied as the physical features. The great plateau on the north has a distinctly continental climate, rigorous severe winters with intense scorching heat in summer; in the eastern part of the plateau region the mountains are covered with snow for two-thirds of the year, and some of the principal ranges are capped with perpetual snow; here the peasants build their dwellings underground to escape the severity of the seasons. Towards the west the winters are not quite so severe, but the variations of temperature are excessive. The valleys and plains in the whole of this high region are generally very fertile, producing fruits in abundance, the olive, mulberry, and other trees, and the vine. The northern slopes facing the Black Sea are humid, enjoying more or less rain all through the year; they are covered with forests of ash, elm, poplar, larch, beech, box, and pine, or are cultivated wherever a patch of level ground is to be found. The valleys which open out into the *Ægean* Sea are exceedingly fertile and have a genial climate; the summers are hot, and severe cold is occasionally felt when the winds blow down from the plateau through the valleys. The rains on the southern slopes facing the Mediterranean fall only in winter and spring, and this coast during great part of the year is excessively hot; the hills are covered with virgin forests, and the coast plains at the eastern end produce oranges, lemons, grapes, cotton, corn, and an endless variety of flowers. The slopes from this mountain region that face the great Mesopotamian plain have a less rigorous climate; the summers are, however, hot and sultry, and violent storms of wind and snow frequently sweep down from the plateau. The great plains are scorched and bare in summer, but the winters are mild, and over the greater part of the desert, which is broken up by oases and possesses a salubrious climate, there are many pools of rain-water, even although there are no streams, and pasturage for camels and sheep is found over large areas. The desert wind called Samiel¹ blows outward in all directions in the summer months. The peculiar disease called "Bagdad date-mark" and "Aleppo button" is common to all the cities on the borders of the desert; it attacks visitors and residents alike, and lasts a period of twelve months, but does not appear to be dangerous. Truffles are found plentifully in the sands of the western desert. Along the Syrian shore of the Mediterranean the winters are mild and the summers oppressive. Along the higher slopes, especially in the Lebanon, where some of the hills rise above the snow-line, the winters are bracing and the summers mild and balmy; there are two rainy seasons, "the former and the latter rains." Towards the desert the country is parched and all vegetation scorched up by the intense dry summer heat. On the Red Sea coast the Tehamah or coast plain is hot, dry, and barren, except towards the south, where it is reached by summer rains and affords good pasturage. The Jebel or mountain region is cooler and well watered, producing an abundant vegetation.

7. *People and Religion.*—The country is very thinly peopled, there being only about twenty-two souls to a square mile of surface. Of the total population of about 16,000,000 less than one-half are of Turkish or Tatar origin, and probably not one-fourth are of real Ottoman blood. Nearly 5,000,000 of the Tatar peoples are settled in Asia Minor, about 1,000,000 in Armenia and Kurdistan, probably 500,000 in Mesopotamia and Babylonia, and another 500,000 in Syria, Palestine, the Hejaz, and Yemen. The agricultural Turks are moral and temperate, and physically a fine race, but the official Turks are debased and corrupt. The Armenians, about 800,000, are chiefly settled in the plateau country round Lake Van, but as

¹ Samiel = poison wind.

the bankers and usurers of the empire they are to be found in considerable numbers in all the cities and towns. The Kurds, the ancient Carduchi, famous horsemen, are still wild and warlike; they are a pastoral people, occupying the mountain valleys and glens on the Turco-Persian frontier south of Lake Van; they number about 1,600,000, and are a terror to their more peaceful neighbours. The Arabs, the old Semitic people, number more than 5,000,000, and still wander with their countless flocks of sheep and camels over the great plain as they have done since the dawn of history. They are great traders in horses and in wool, and are but nominally under the Turkish Government, recognising only the authority of their sheikhs. The Greeks chiefly occupy the islands of the Archipelago and the towns on the Asiatic shores of the *Ægean*, but as merchants and handicraftsmen they are to be found scattered all over Asia Minor; they number about 1,000,000, and are the best educated and most civilised of all the races in the empire. There are some 30,000 Circassians, rough and fierce mountaineers, distributed in small settlements throughout Asia Minor and Armenia, immigrants from the Caucasus, who preferred Turkish rule to Russian. These, together with a few Lazis on the Black Sea coast, and some 200,000 Jews, Gypsies, and Negroes, scattered over the country, complete the motley group of antagonistic races that constitute this decaying empire.

The dominant religion is Mohammedanism of the Sunnite sect; some 13,000,000 of the population profess this religion, but less than one-half of these are Turks; about 3,000,000 are nominally Christians, including Greeks, Armenians, Europeans, and (about 500,000) Syrians. The members of the various Christian sects, Greek and Latin, Catholic and Protestant, are as adverse to each other as to the Mohammedan, and all help in their several ways to prevent the fusion of the peoples into a nation.

8. Products.—The mineral wealth is great; coal and ironstone are found together in considerable quantities; rich mines of copper exist in the mountains on the south of the Black Sea, and in the Taurus near Diarbekr lead and silver is found at intervals along a line connecting Angora, Sivas, and Trebizond, in the north, and in the eastern Taurus in the south; green, black, and white marble, and the finest quality of granite is to be had in many parts of the mountain section. With a fertile arable soil and a suitable climate, nearly every agricultural product flourishes. Oats, barley, and wheat are produced in great abundance. Almost all kinds of garden produce and orchard fruits abound, grapes and oranges are to be had all round the Mediterranean coast, as well as the choicest tobacco, opium, valonea and madder. The mulberry is everywhere cultivated for feeding the silkworms, and cotton is grown in most of the western valleys. Vast groves of boxwood and other valuable trees clothe the seaward slopes of the hills. Dates are produced for export in the Babylonian plain, where wheat is indigenous. Petroleum and bitumen springs are found in the Euphrates Valley. Angora is famous for its flocks of goats, which produce the mohair of commerce, and enormous quantities of wool come from the countless flocks of sheep tended by the wandering Bedouin and Kurd shepherds. There are at present no manufactures worth mention. One industry, however, should not be omitted, the sponge fisheries of the Mediterranean, which are a source of great wealth. There are no roads worthy the name throughout the country, and this renders transport so difficult, and the cost so high, that, except near the sea and the great waterways, the industries are stifled, and there is little or no commerce. There are three lines of railway, but they are comparatively short and unimportant, situated close to the western shores of Anatolia.

9. Divisions and Chief Towns.—Turkey in Asia is divided into twenty-two provinces, nineteen being first-class pashaliks or vilayets, and three second

class pashaliks or mutessarifiks; they are subdivided according to their size into from two to seven counties or sanjaks, which are again subdivided into districts or kazas. The following is a list of the vilayets and mutessarifiks, with the names and population of their chief towns:—

Vilayets.	Chief Towns.	Vilayets.	Chief Towns.
Khudavendigar . .	Brusa (60,000), Kutahia (60,000).	Ma'mret el Aziz ² . .	Arabkir, Kharput.
Aidin . .	Smyrna (150,000), Manissa (60,000), Aidin.	Diarbekr . .	Diarbekr (11,000), Malatia.
Jezireh Bahri-Seffid ¹ . .	Rhodes (15,000).	Bagdad . .	Bagdad (67,000).
Kastamuni . .	Kastamuni (40,000), Sinope.	Basra . .	Basra (40,000).
Angora . .	Angora (40,000), Kaisarieh.	Mosul . .	Mosul (75,000).
Konia . .	Konia (30,000), Adalia.	Aleppo (Haleb) . .	Aleppo (75,000), Merash, Urfa.
Adana . .	Adana (25,000).	Syria . .	Damascus (150,000), Beirut (80,000), Hama, Akka (Acre), Tarabulus (Tripoli), Latakieh.
Sivas . .	Sivas (15,000), Amasia, Divriki.	Lebanon ² . .	Deir-el-Kamr (2,700).
Trebizond . .	Trebizond (50,000), Samsun.	Jerusalem ² . .	Jerusalem (16,000).
Erzrum . .	Erzrum (55,000), Erzincan, Bayezid.	Hejaz ³ . .	Mecca (30,000), Medina.
Van . .	Van (15,000), Mush.	Yemen . .	Sana (15,000).

Ismid, locally situated in Asia Minor, is a sanjak of the special vilayet of Constantinople.

Samos, an island of the Archipelago, is by the Convention of 1828-9 autonomous under a Christian prince paying tribute to the Porta. It has an area of 212 square miles, and a population of 35,000 Greeks, and is one of the most fertile of the whole group; it exports corn, grapes, oil, valonea, and muscatel wine.

Cyprus, under the Convention of 1878, is administered by the British Government. (See p. 268.)

The principal ports of Asiatic Turkey are Trebizond and Sinope on the Black Sea, Smyrna on the Ægean, Mersina and Alexandretta on the Gulf of Iskanderun; Beyrut, a prosperous town, the port of Damascus, at the head of the only good road in the country; Jaffa, the port of Jerusalem, Jedda and Hodeida on the Red Sea coast; and Basra on the Shat el Arab, at the outlet of the great water-highways that thread the vast plains of Babylonia and Mesopotamia. Within the limits of Asiatic Turkey are situated the holy cities of Jew, Christian, and Mohammedan—Jerusalem, containing the site of the Jewish temple and of the crucifixion of Jesus Christ; Mecca, the birth-place of Mohammed; and Medina, the place of his death.

ARABIA.

1. General Description.—The peninsula of Arabia is bounded west by the Red Sea, east by the Persian Gulf, south by

¹ Islands of the White Sea = the Archipelago.

² These are the mutessarifiks. By an international arrangement the Lebanon is administered by a Christian governor.

³ The Hejaz is also called the principality of Mecca.

the Arabian Sea, and north by the great Syro-Babylonian plain. That part of Arabia which is at present independent of Turkey embraces all the interior and the south and east coasts, between the Bahrein Islands and Aden. About two-thirds of this area consists of cultivable land, and one-third of irreclaimable desert. It is divisible into three sections—Nejd in the north, Oman in the south-east, and Hadramaut in the south. The northern “highland” of *Nejd* is bounded on all sides by a strip of desert of varying width and sterility, but always interrupted at intervals by oases or alight depressions in its generally uniform surface, where a well or spring, surrounded by a few herbs and bushes, a little grass, and occasionally date-palms, enables the Bedwin to find the needful supply of fodder for his camels, and to lead the caravans of merchants or pilgrims across the trackless waste. The northern desert, or *Nefud*,¹ extends from the oasis of Teyma, on the borders of the Turkish province of Hejaz, across by the oasis of Jauf, to the border of El Hasa, on the Persian Gulf: it is partly a stony “hamada,” partly covered with reddish sand, which is heaped into ridges from 200 to 300 feet high, like a sea of red-hot waves. It is absolutely bare, save in the spring of the year, when it is thinly sprinkled with grass and herbs. In some parts a small herbaceous plant, called *samh*, grows wild, which produces a reddish farinaceous seed, and yields the Bedwin his staple food supply. Over this desert the *simoom*² blows during the summer heats at uncertain intervals. There is no sand or dust in the atmosphere during the short period that the wind lasts; but the whole horizon becomes dark, as the stifling blast, with the heat as of red-hot iron, passes over. To the west, along the borders of Hejaz, the desert is yet more irregular, and presses in towards the central highland between the mountain ridges in long finger-like projections: it cuts off the maritime provinces from all political influence with Nejd. The *Dahna*³ bounds the settled country to the east and south, and is the main sand waste of Arabia; it has never been crossed by European travellers; and even the Arabs avoid this impenetrable waste of loose reddish sand, without water or vegetation of any kind, extending south of the tropic line for a distance of 300 or 400 miles. These deserts lie on a plateau of some 3000 feet altitude, and are surrounded by a girdle of mountains which rise on the western side to a considerable elevation. In the northern desert lies the remarkable oasis of *Jauf*, some 60 miles long by 10 or 12 broad, containing three flourishing villages. Each house stands in its own orchard, where the fig and the vine, the apricot and peach, and the choicest dates are cultivated, and where the fruits are not surpassed by the

¹ Nefud = sand-passes.² Simoom = poison blast.³ Dahna = red desert.

famous gardens of Damascus. It has a good dry climate, and healthy and vigorous inhabitants. The *Nejd*¹ is the central plateau, and is a compact, settled district, bounded by ridges of hard rocks, and culminating in a crescent-shaped mountain range, called *Jebel Toweyk*,² the backbone of Central Arabia north of the tropic. This mountain is composed chiefly of chalk, but has a few granite crests on its south-eastern edge, where iron ore is abundant. It is cut up by a perfect maze of valleys, which become roaring torrents during the rains, but are dry at all other times; but everywhere, at all seasons, water is to be obtained at a depth of twelve to fifteen feet beneath the surface. In these valleys the people plant their towns and villages, for the shade and vegetation they afford. North of *Nejd*, and separated from it by a narrow arm of the *Nefud* about twenty miles broad, lies the secondary plateau of *Jebel Shomer*; two ranges of mountains, *Jebel Aja* and *Jebel Selma*, cross this plateau in a S.W. to N.E. direction. *Jebel Aja* (5600 ft.), composed largely of granite, is the northern rim of the whole table-land, and is probably not inferior in height to *Jebel Toweyk* to the south.

Nejd and *Shomer* have a dry, bracing atmosphere and healthy climate. The southern part of *Nejd*, near the tropic, is less salubrious, but is the more fertile, being damper and hotter. Dates of excellent quality and of several varieties are here produced in abundance, and are the main source of landed Arab wealth. Corn, maize, millet, melons, pomegranates, and peaches, grapes, figs, oranges, and citrons are also grown. A little cotton is cultivated, and lentils in the south. Rock salt is found in the west. Camels and sheep, horses, and humped oxen are numerous. Wild boars, gazelles, partridges, quails, and pigeons are also to be found. The celebrated Arabian horses are tended with the greatest care, and none of the best breeds are allowed to leave the country. *Oman*, at the extreme south-eastern end of the peninsula, is a country about as large as England and Wales. It is filled with a plateau-like group of mountains, the dominating feature being a range called *Jebel Akhdar*,³ which stretches from *Ras Mesandum* on the north, to *Ras el Hadd* on the south. This mountain gives rise to numerous small streams on its seaward slope, which run at intervals underground, and almost all of them disappear entirely before reaching the coast. *Oman* is the richest district of Arabia, both in agricultural products and in mineral treasures. Along the seaboard there are two seasons, each lasting about six months. The hot season is most oppressive, the land becomes scorched, and the towns like ovens. During the rainy season the N.W. monsoon blows with great force. On the hills it

¹ *Nejd* = up country, or hill country.

² *Jebel Toweyk* = the twisted mountain.

³ *Jebel Akhdar* = green mountain.

is comparatively cool all the year round. The chief products are coco-nuts, dates, mangoes, corn, maize, coffee, sugar-cane, apricots and peaches, cotton and indigo. Lead and copper are mined ; but skill and energy and good government are wanting to develop the mineral resources of the country. *Hadramaut* is a country of which very little is now known ; it was once famous for frankincense and myrrh : it occupies the shores of the Arabian Sea from Oman on the east to Yemen on the west, and consists apparently of a confused mass of hills, composed of limestone, sandstone, slate, quartz, and gneiss, culminating in heights of 6000 feet within 100 miles of the coast. Beyond this there appear to be extensive plains sloping down inland to the great desert. It is occupied by independent Bedwin chiefs ; produces wheat and barley, dates and lemons, sheep, goats, and camels. Its chief port is Makalla. The chief islands round the coast are, the Bahr el Benât, formerly known as the East India Company's Islands, lying off the north or Pirate coast. The Kurian Murian Islands, lying off the south coast, barren and rocky, belong to the British Government. Perim Island, a fortified rock which commands the entrance to the Red Sea, is also British.

2. People and Religion.—The people of central Arabia may be divided into two classes—the Hadesi, or settled inhabitants of the towns and villages, and the Bedwins, or wanderers, occupying the open pastures of the great Arabian plain and the numerous small oases in the desert. The genuine Arab is nature's gentleman, noble and handsome, of well-developed stature and healthy complexion, and is distinguished by a great respect for authority and love of commercial enterprise. He is by birth and education a Mohammedan of the severest type ; but scepticism and unbelief are as rife here as in Christian countries, although not openly professed. The Bedwin, although of the same race, has descended to the lowest depth of moral and mental degradation ; he is the same wild herdsman that he was 2000 years ago. He appears to be naturally and by inheritance a sun-worshipper, but for convenience he adopts Mohammedanism, and in the neighbourhood of the settlements conforms outwardly to its laws. Negroes are numerous, both slave and free, all over Arabia, but in Nejd especially they form a considerable portion of the town population. There are about 1,000,000 settled inhabitants and 75,000 nomades in Nejd and its dependencies ; whilst Jebel Shomer has about 274,000 settled inhabitants and 166,000 nomades. The language of the settled inhabitants of these central districts is the pure and elegant Arabic of the Koran, whilst Himyaritic dialects are spoken in the east and south.

The inhabitants of Oman are very mixed, consisting of Arabs, Banians, Baluchis, Negroes, Abyssinians, Somalis, and Persians. They number about 1,750,000, and are tolerant in religious matters ; the majority outwardly profess Mohammedanism.

3. Governments, Divisions, and Chief Towns.—Nejd is at present divided into three States, which, until recently, formed the sultanate of the Wahabi. This sect, named from its founder, seeks to retain the Islamism of *the Koran* to the letter ; and the result is, as usual, intolerance, aggression,

fanaticism, and espionage, which hinders all social progress and clips the wings of commerce. Riadh, the capital city of the Wahabi (lat. $24^{\circ}38'34''$ N., long. $46^{\circ}41'48''$ E.), contains a population of about 30,000, and has a Jamia, or house of prayer, capable of holding 4000 people; it is surrounded by strong walls in good repair, about 30 feet high, and defended by a trench and embankment. It stands in the midst of fruit gardens. *Shomer* (*Shamar*) is now the more powerful State of the Nejd, extending from Jebel Aja across the Nefud to the oasis of Jauf, and from Hejaz to within a short distance of the Euphrates. Häyel, the residence of its Emir, is surrounded by a wall about 20 feet high, with bastion towers and large folding gates at intervals; it contains a population of 20,000, and many large gardens and open spaces, together with an immense palace and pleasure-grounds, are included within the walls. It has a large trade in horses and camels, and is a station on the Persian Haj or pilgrim route between Bagdad and Mecca. In *El Kasim* are the towns Bereydhah and Oneyzah.

Oman is divided into eight provinces, each enjoying almost the independence of a tributary state; the central government is weak. The chief towns are Mascat, the capital, a large and tolerably clean commercial city, with a population of 40,000, surrounded by old Portuguese fortifications, with a small but good harbour, open, however, to the fury of the N.W. monsoon. Matrah, three miles north-west, and almost a suburb now of Mascat, has also a good harbour, and a population of about 30,000. Barka, Sohar, and Sharja are seaport towns, with harbours and considerable trade; Nezwah and Bereymah are important inland towns.

Aden, on the north coast of the gulf of that name, between Yemen and Hadramaut, is a British possession and free port, on a volcanic peninsula, five miles long by three broad. It has a population of 35,165; is absolutely naked and barren; great reservoirs for rain-water have been constructed by the British, and the fortifications erected by them have rendered the place impregnable. Jebel Hasan, a sister promontory on the western side of Aden harbour, and about four miles distant, is also British. A large territory around Aden is occupied by tribes who are in the pay of the British Government.

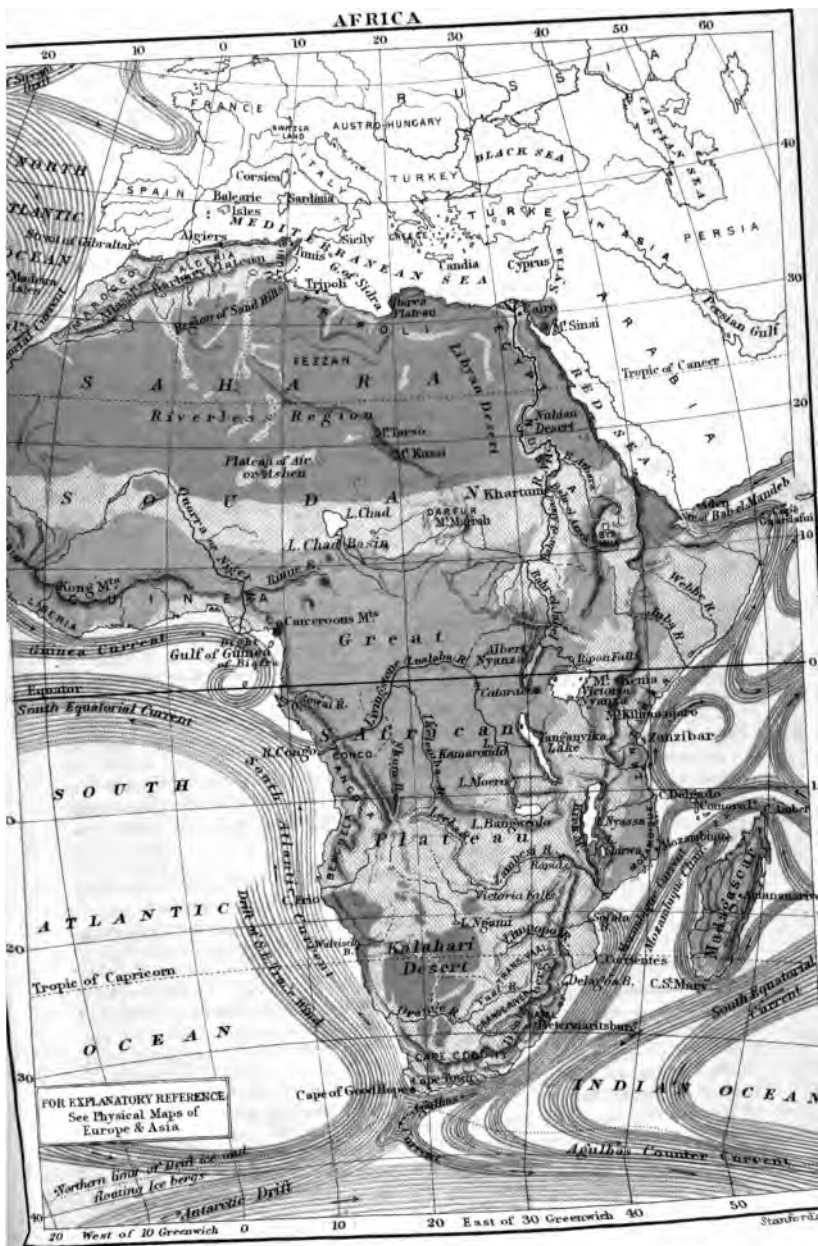
AFRICA—GENERAL.

1. AFRICA forms the vast south-western peninsula of the Old World continent, tacked on to Asia by the narrow isthmus of Suez, and surrounded on all other sides by the sea—the Mediterranean on the north, the Atlantic on the west, the Indian Ocean and its gulf the Red Sea on the east. From Ras el Kerun, its most northerly point on the Mediterranean coast, to Cape Agulhas or “The Needles,” the boundary mark between the Atlantic and Indian Oceans, in the farthest south, its length is about 5000 miles. From Cape Verd pointing into the Atlantic on the west, to Cape Guardafui (Girdifo, or Ras Assir) in the east, it reaches about 4600 miles. Its area, of nearly twelve millions of square miles, is more than three times that of Europe.

2. No other part of the land on the surface of the globe is so rounded and compact, and on that account so difficult of access, as Africa. The contrast between the broken European shores and the massive African coasts of the Mediterranean was observed by the earliest geographers; the same continuous unbroken margin extends all round the sixteen thousand miles of its shore line. The islands which are considered as belonging to it, such as the Canaries, the Cape Verd Islands, Ascension, and St. Helena, lie out in the ocean far from its shores, and Madagascar is separated from it by 300 miles of deep sea.

3. **Relief.**—Guarded by its inhospitable shores, large areas of the interior of the continent are as yet altogether unknown, and it is only during the present century that the tracks of travellers across it have become sufficiently numerous to enable us to form any general conception of its inward form and character. As a whole the continent may be regarded as a vast plateau, bordered round by maritime ranges which form the seaward edges of the interior table-lands.

If we begin in the extreme north-eastern corner where Africa joins on to Asia, we find the land rising immediately west of Suez, at the southern end of the ship canal, to a height of 2600 feet, named *Jebel Attaka*; from this we may follow a chain of heights rising abruptly all along the western shores of the Red Sea till we reach the high edge of the *Abyssinian highland*, 7000 to 8000 feet above the sea, over which the British expedition marched to Magdala



London. Published by Edward Stanford 35 Charing Cross Feb. 16. 1892.

in 1868. Farther on southward we reach that part of the margin of the plateau on which the snow-capped *Kenia* (18,000 feet) and *Kilima-njaro* (18,700 feet) rise between the Indian Ocean and the great lakes; then the *Livingstone Mountains* (11,000 feet), which wall in Lake Nyassa; and in the farthest south the *Drakenberg* ranges, which rise steep and wall-like facing the Indian Ocean, and leading round to the terraces which form the Cape Colony. Turning the high Cape of Good Hope to the Atlantic margin, the same terraced ascents from the sea-coast to the borders of the interior plateau present themselves all along the western side of the continent from the Cape Colony to the head of the Bight of Biafra. Round the Guinea coast also, beyond the low delta of the Niger, as far as Cape Verd, the plateau edge slopes up immediately from the sea, and has received the general name of the *Kong Mountains* in this part. In Marocco the bordering maritime heights are taken up again by the *Atlas Range* (Miltzin, 11,400 feet), and are continued along the Mediterranean by the *plateau of Barbary*, by the ranges called the *Jebel es Soda*, or Black Mountains of Tripoli, and by the heights of *Barca* farther east, bringing us again to the delta of the Nile.

4. Within the border of maritime heights which we have been tracing, all southern Africa may be regarded as a vast plateau at a general elevation of about 3000 feet above the sea. Two of the most prominent interior ranges which rise from this portion of the plateau are those called the *Mushinga Mountains*, which seem to have an east and west direction, separating the wide basins of the Congo and the Zambezi rivers, and the mountains to the westward of Lakes Albert and Victoria Nyanza and Tanganyika, which form the western edge of the great plateau of eastern equatorial Africa, the centre of which is occupied by Unyamwezi, and slope down towards the broad vale of the central Congo.

Northern Africa, between the higher southern plateau and the mountains of Barbary on the Mediterranean coast, appears to be generally lower, or at an average elevation of from 1000 to 1500 feet above the sea; though the plateau formation remains the same. The prominent lines of heights known within it are those which extend from the *Marrah Mountains* of Darfur, between the Nile basin and that of Lake Chad, north-westward through the mountain land of *Tibesti*, in the centre of North Africa, to the series of plateaus occupied by the Tuarej tribes south of the plateau of Barbary. A remarkable volcanic belt is traced through the Bight of Biafra in the line of the islands of *Annobon*, *St. Thomas*, *Princes*, and *Fernando Po* (10,190 feet), to the high *Cameroons Mountains* (13,760 feet) on the coast of the mainland, and thence inland on the same abrupt line to Mounts *Atlantika* and *Mendis*, midway to Lake Chad in the interior.

5. It results from the general plateau form of the continent that its lowlands are confined almost exclusively to the narrow fringes of the coast, and to the alluvial flats which have been pushed out seaward by one or two of its rivers, such as the delta of the Nile on the Mediterranean coast, that of the Zambezi on the margin of the Indian Ocean, or of the Ogowé and Niger towards the Atlantic. Elsewhere lowlands occur only as hollows sunk or bedded within the lower plateaus of the north African region; of these the most remarkable is the hollow which lies south of the plateau of Barbary in Tunis, separated from the head of the Gulf of Gabes only by a narrow belt of rock, and containing within it several lagoons or salt-marshes, called "shott" or "shores" by the Berbers, which lie depressed a few feet below the level of the Mediterranean. Within the limestone plateau of the Libyan Desert, between Barca and the Nile valley, there also occur a number of isolated hollows of small extent, the beds of some of which have been found to be nearly 100 feet beneath sea-level.

6. **Rivers.**—The poverty of Africa in flowing waters was also noticed in the earliest times, and has contributed as much to its long seclusion as the harbourless character of its coasts.

Over almost all the wide northern region of Africa, for reasons which we shall understand when we come to look at its climate, there is scarcely any permanently flowing river excepting the Nile, which, however, draws its supplies from more favoured regions far in the south. The streams of the Barbary plateau in Morocco and Algeria are mere torrents, filled to excess during the winter rains, and dwindling down to a thread of water in the dry summer. Beyond the plateau, over all the vast area of the Sahara, there is no constantly running stream, though the surface is furrowed by deeply cut "wadis," or water channels, which rapidly drain off any shower that may fall, and quickly dry again.

The streams of the Cape Colony, at the other extremity of the continent, have the same character as those of the Barbary plateau, finding their way to the sea through deep-cut gorges or "kloofs," flooding after the winter rains, and dwindling down almost to dryness after fair weather. Inland from the Cape Colony lies the Kalahara Desert, corresponding to the Sahara in the north, and furrowed like it by periodically filled channels.

The broad central belt of Africa on each side of the equatorial region is, however, well supplied with moisture, and here, accordingly, we find great lakes and large, flowing rivers.

7. The best known of the four great rivers of Africa, the *Nile*, has its highest great reservoir in the *Victoria Nyanza*, an expanse of fresh water occupying an area as large as Scotland, and crossed by the equator. From this it overflows by the Ripon Falls 12 feet high and flows north-westward, descending by the Karuma and Murchison Falls to where it joins the *Albert Nyanza*, which has been described as a great backwater of the river, shut in by the high blue mountains of Ulegga. Issuing from the *Albert Nyanza* the river is navigable for nearly 100 miles, to near the bend of Duffi, where it is again interrupted by cataracts. After passing the Egyptian station of Lado, about 5° N., the river again becomes navigable, and flows northward through a level marshy country with many loops and branches. At Lake No (in 9° 30' N.) it is joined by the group of tributaries from the west, which gather to form the broad river called the *Bahr el Ghazal*, the first great tributary of the Nile. Below this it bends due east to where the *Sobat* river joins it from the highlands in the east, and then turns north for 500 miles to the town of Khartum, being known along this portion of its course as the *Bahr-el-Abiad*, or White River. At Khartum the *Bahr-el-Azrek*, or Blue Nile, joins it from the high Lake Tzana on the Abyssinian plateau. Near Berber, 200 miles north-east of Khartum, the Nile receives its last tributary, the *Atbara*, which rises as the *Takazze*, or "the Terrible," in the gorges of the Abyssinian highland. From this point the Nile forms a great bend through Nubia, interrupted by several cataracts, and then flows quietly northward through the desert to its delta on the Mediterranean, receiving no supplies from rain or affluent streams for 1200 miles, and diminishing greatly in volume from evaporation as it passes on through the dry country. The Nile is easily navigated from the delta upward to the first or Assuan Cataract in 24° N. lat., but the toilsome ascent of that rapid by boat requires more than a day. The second, or Wadi Halfa Cataract, in 22° N., is the head of the free upward navigation of the river for larger vessels. The Nile varies in volume greatly during the year, but it is only in the lowlands of the delta that this is of great importance, for the fertility of that alluvial plain, and the annual success or failure of the crops over it, depend in great measure on the extent of the fertilising inunda-

tion from the river. At Cairo the rising begins in mid June, and when it has swelled to a height of 16 cubits in August, the "khaleeg," or dam near Cairo, is cut, allowing the river waters to fill the system of canals which ramifies over the delta. The maximum rise is generally reached in October, after which the flood begins to fall, and the lowest Nile occurs in May.

8. The great river of West Africa, the *Niger*—discovered by Mungo Park—rises on the inner side of Mount Loma, one of the summits of the range which marks the edge of the plateau in this part of Africa, and flows, as the *Joliba*, north-east to Timbuktu on the border of the Sahara Desert, then turning east and south-east and changing its native name to *Quorra*, reaches the Gulf of Guinea through a great delta. In its south-eastern course it is joined from the east by the *Binue*, nearly as large as the *Quorra* at the confluence, a tributary which seems to rise in the mountains midway between the Cameroons and Lake Chad, though its sources are yet unknown. The *Niger* is the great highway of the Western Súdán, and is now regularly navigated by British trading steamers from the Atlantic to the towns which lie along its banks above the confluence of the *Binue*; the latter river, though it has been navigated for several hundreds of miles upward, is still closed to European traffic from the jealousy of the tribes on its banks.

9. The *Senegal* and the *Gambia*, reaching the Atlantic north and south of Cape Verd, are important navigable rivers, the former in possession of the French, the latter dotted with British factories along its banks.

10. Just south of the equator, on the West African coast, the *Ogowe* river has pushed out a large mangrove-covered delta into the sea. The exploration of this river upward has been progressing in quite recent years. About seventy miles above the head of the delta the main stream—more than a mile wide—is formed by two branches, one from the east named the *Orembavolo* or *Okanda*, the other from the south-east named the *Orembawango* or *Ngunie*; both of these upper streams are soon interrupted by falls and rapids, but a regular traffic is now maintained along the lower river to the French, British, and Hamburg trading stations on its banks.

11. Some way farther south we come to the mouth of the greatest of African rivers, the *Congo* or *Zaire*, which pours out such a flood of water into the Atlantic that the sea surface for many miles out is kept perfectly fresh.

It is only since the journey of the explorer Stanley in 1877 that the enormous proportions of this African river have been realised. We now know that this river has its great lake reservoirs like the Nile. The southernmost of these is Lake *Bangweelo*, first explored by Livingstone, a vast expanse of shallow water, 3700 feet above the sea, which shrinks or expands with the seasons, and is fed by the *Chambeze* and other rivers of small importance. Issuing thence northward as the *Luapula*, the river traverses Lake *Moero*, and passing from that through a tremendous gorge, as the *Luvua*, it soon afterwards is joined by the *Lukuga* from the eastward. This is the drain of Lake *Tanganyika*, first discovered by Cameron, and quite recently traced for a considerable distance by Keith Johnston's more fortunate companion, Mr. Thomson, who has thus definitely solved one of the great problems in African geography. The *Tanganyika*, a lake nearly 400 miles long and 25 broad, occupies a comparatively narrow mountain-walled trench, like that of the *Nyassa*, farther south. It lies about 2700 feet above the sea, is very deep, rises a few feet during the rainy season, and has fresh water. The *Malagarazi* river, from the east, is the largest river that flows to it. It rises on the plateau of *Unyawezi*.

12. The *Luvua*, in its onward course, receives a great tributary named the *Lualaba* from a lake chain on the south-west. Overflowing from Lake *Lanji* or *Kamatondo*, the river, now called the *Lualaba*, flows in a northerly

direction in the heart of the continent, receiving the *Lomami* from the south-west. On approaching the equator it forms a series of cataracts, and then swerves to north-west and west. Between long. 26° and 17° E. it has an uninterrupted flow of 1400 miles, receiving magnificent affluents from the south, but on nearing the mountains which rise on the western margin of the continent it passes through them by a long series of cataracts and rapids, which terminate in the *Pellala Falls* 140 miles from the sea. At 60 miles from the sea the width and strength of the river are so great, that it requires half-an-hour to cross it in a good boat, with ten strong Kroomen paddling.

13. South of the Congo the *Coanza* is the most important river of the west African coast, as it affords a navigable way 120 miles up from the sea to where rapids interrupt its course. This part of it is now regularly traversed by steamers. The *Nourse* or *Cunene*, remarkable for the number of its crocodiles, is narrow and shallow, and quite unnavigable. The *Orange*, the boundary river of the Cape Colony, formed by the *Vaal* and the *Nu Gariep*, from the inner slope of the Drakenberg range, is also a torrential river, shut in by precipitous walls, with many rapids, besides the great falls of *Aughrabies* midway in its course.

14. Opposite the basin of the Orange, on the eastern side, we come to the *Limpopo*, the second river in size of those which flow to the Indian Ocean from Africa. This is also a shallow and variable river, navigable only for about 60 miles up from the ocean by small vessels.

15. Farther north is the *Zambezi*, the chief river of east Africa. This great stream has one of its sources in the little lake *Dilolo*, which lies on a ridge west of the Mushinga mountains, that separates the drainage of the Congo and Zambezi basins. From Dilolo the course of the *Leeba*, as the upper river is named, is south-eastward to where it is joined by the *Leeambye* from the Mushinga range on the north-east. The united river then flows south and eastward through the fertile Barotse valley till it reaches 25° E. longitude, near which meridian it leaps down 100 feet by the magnificent *Victoria Falls*, called by the natives *mosioatunya*, or "smoke sounding," into a narrow zigzag gorge in the basalt rocks. Thence the river flows north-eastward with impetuous current, and afterwards turns east, receiving the Loangwa from the north, besides other large tributaries. At the *Kebrabasa* rapids, and in the *Lupata gorge*, where the river passes the margin of the plateau to descend to the maritime slope, its channel is again considerably lowered. Below this it winds south-east, and on the coast it forms a great delta which reaches out 80 miles between the farthest apart of the channels into which the river divides. It becomes navigable at the Portuguese settlement of Tete, 260 miles from the sea. A few miles above the apex of the delta it receives the *Shire* river, the outflow of the great *Nyassa Lake*. The Nyassa fills out a narrow trench more than 300 miles long from north to south, walled in by the high mountains of the Livingstone range, which rise almost precipitously to the height of 11,000 and 12,000 feet on its eastern shores. The Shire flowing south from it is interrupted in its course to the Zambezi by the Murchison Cataracts, but below these its channel is freely navigable for 100 miles to the great river.

16. The notable rivers of the east African slope northward of the Zambezi are the *Rovuma*, almost an unnavigable river; the *Lufiji* which has yet to be explored; the *Kingani* and *Wami* reaching the coast opposite Zanzibar island; the *Rufu* from Kilima-njaro; the *Dana* from the snow-clad mountain Kenia; and the *Juba* river which reaches the sea just at the equator from the mountains south of Abyssinia: in attempting to navigate this river the unfortunate explorer Baron Von der Decken was killed in 1865.

17. There remain to be noticed two rivers and lakes of the inland or continental drainage of Africa which correspond remarkably with one another in their characteristics. The northern of these is the *Shari* river, and lake *Chad* which it supplies. The Chad is a great variable and shallow expanse of fresh water on the southern border of the Sahara, at an elevation of about 800 feet above the sea. In the dry season it has an area of about 10,000 square miles, and then presents the appearance of an immense swamp, overgrown along the margins with reeds and papyri in thickets haunted by hundreds of hippopotami, and clouds of wild-fowl. After the rains, however, it spreads out to a much larger area, and then sometimes overflows by a broad channel to a second depression called the Plain of Bodele, which lies 300 miles north-east of it. The southern is the *Tioge* river and its lake *Ngami*, on the border of the Kalahara desert in Central South Africa, 2800 feet in elevation. The Ngami is generally about 300 square miles in area, but expands and contracts like the Chad with the rain and the dry season, overflowing like the former also at seasons of flood by the Zouga channel to a number of wide "pans" or depressions south-east of it. Sometimes it happens that these pans discharge their surplus water into the Shasha, a tributary of the Limpopo, and Lake Ngami lies thus on the slope which drains into the Indian Ocean.

18. Climate.—Africa is the most completely tropical quarter of the world. If we look at the map it will be observed that only its northern and southern extremities lie beyond the lines between which the sun may pass vertically over the land, so that great heat is the chief characteristic of its climate; this, however, is reduced by the general elevation of the continent. Drought is the other great feature over all the immense area of northern Africa; there north-easterly winds prevail, and these coming from cooler to warmer latitudes and passing over the great continent of Asia, take up the moisture as they pass, and give the land its generally dry and barren aspect. In the far south also the corresponding south-easterly trade-winds are the most frequent, and these expending the moisture they have gathered from the Indian Ocean on the high outer margin of the continent, leave all the interior of South Africa deficient in rainfall, and in parts almost as barren and dry as the Sahara in the north. The central region of the continent on each side of the equator is, however, well supplied with rainfall, for the winds are drawn in thither from the ocean on both sides to that part of it which for the time lies beneath the heat of the vertical sun, and there the combined heat and moisture have raised up a covering of richly luxuriant vegetation, and forests which may be compared with those of the East Indies. On the northern and southern borders of the continent—in the maritime districts along the Mediterranean, and of the Cape Colony in the south—the rain supply comes in winter, but within the tropics the rains are obedient to the apparent movements of the vertical sun, and thus swing gradually north and south over the central regions of Africa, to and fro across the equator towards each tropic during the year. The landscape of the continent thus presents a regular gradation from habitable lands on each extremity north and south to bare dry deserts, and from these through pastoral grass lands to the broad equatorial belt, of which humid climate and luxuriant forest growth are characteristic.

All the low coast-lands of Africa are haunted by fevers which are most malignant in the coast-lands on each side of the equatorial region, where the spreading mangrove, sending down roots from its branches, forms a dense thicket along the sea margin, and about the mouths of the rivers causing stagnant lagoons within the coast-line, and gathering there a great accumulation of decaying vegetable matter which forms a fetid black mud; behind

this low coast region, however, the high plateau lands of the interior have almost everywhere a healthy climate.

19. *Products*.—The vegetation of Africa is rather peculiar than varied. Corresponding to the dry climate of the extremities of the continent are the cactus-like spurge-plants, aloes, heaths, and bulbs. The *date-palm*, and, in a less degree, the *doum palm*, are the mainstays of the inhabitants of the dry Sahara region. In the Atlantic maritime region of equatorial Africa the *oil-palm* flourishes, and gives rise to the greater part of the trade of that region; there also the remarkable tree which yields the *shea butter* is found; gum-yielding *acacias* are characteristic African trees; the *copal* gum-tree is abundant in the eastern and western equatorial coasts, where the indiarubber-yielding *Landolphia* creepers have recently become of great commercial importance. *Ebony*, *rosewood*, and African *teak* are among the trees of the central forests. Africa is also the home of the gigantic *baobab*, the hollow trunk of which often serves as a water cistern. *Coffee* is probably native to the region south of Abyssinia; but it is of the greatest commercial value in Liberia.

20. Hoofed animals are more numerous in Africa than in any other region of the world. Here are the wild elephant, whose ivory is a staple article of barter in all parts of the continent, several species of rhinoceros, hippopotami, the zebra, and other horse-like animals, and the stately giraffe, but especially great herds of antelopes of many kinds. Lurking in wait for these are lions and panthers, jackals and hyenas, and other carnivorous animals. The fauna is also rich in apes, among which, peculiar to the continent, are the chimpanzee and man-like gorilla. Madagascar has its peculiar ape-like lemurs, nocturnal in habits. Ostriches are found almost all over the continent, and in the Cape Colony are now farmed and herded like cattle or sheep. Numbers of birds of passage make Africa their winter quarters. Crocodiles abound in almost all the rivers. The plague of central and southern Africa is the Tsetse fly, an insect resembling, and scarcely larger than, our common house fly, the bite of which is fatal to horses, and sometimes to cattle, though it is perfectly harmless to man or to wild animals. It appears to infest certain areas within definite limits, and also to follow the herds of game about in their migrations, but as yet the laws which control its appearance are not known.

21. The great mineral treasure of the Sahara region in the north is its salt. Gold is found in the rivers of West Africa. The gold coin formerly current in Britain took its name from the metal brought from the Guinea coast, from which it was first coined in the reign of Charles II. The gold of Sofala long ago drew the Portuguese to that part of South-East Africa, and now the goldfields of the neighbouring Transvaal region are becoming of great importance. Iron abounds in Algeria. Copper is the great mineral resource of the western districts of the Cape Colony, and the copper country of Katanga in central South Africa has long been famous in native reports. The diamond-fields, discovered in 1867 on the northern borders of the Cape Colony, have brought about great changes in that part of the continent.

22. *Peoples*.—The whole number of people within the African continent can only be vaguely estimated, but probably exceeds two hundred millions. Owing to the vast extent of the regions within it which are scarcely habitable from the extreme dryness, the population of Africa is much less dense than that of Europe or of Asia, but it is in a corresponding degree greater than that of America, or of thinly-peopled Australia.

The density of the population is regulated naturally by the character of

the landscape. In the fertile extremities lie the well-peopled states of Barbary and Egypt in the north, and of the Cape Colony in the south. Within these come the sparsely-inhabited regions of the Sahara and of the Kalahara, and after that the well-peopled central area of the continent from the Sudan to the valley of the Zambezi.

We have already (p. 68) noticed the chief groups of the African peoples. The *Hamitic* family, emigrants from South-Western Asia in remote antiquity, formerly occupied the whole of the lower and middle Nile valley, and the north-eastern maritime region of Africa, nearly as far as the equator, and were the Egyptians and Numidians of history. The *Semitic* peoples, probably of the same family, who followed them from Asia within historical times, have spread all over the northern and eastern region of the continent, carrying Mohammedanism with them on their way, and as Arab ivory and slave traders are even to this day extending their journeys into the heart of the continent. Members of the *Aryan* family have settled as yet in considerable numbers only in the northern and southern extremities of the continent (Algeria and Cape Colony), and are found elsewhere only at the trading ports around the coasts. The *Negroes*, or "black" men, native to Central Africa, are marked generally by their black woolly hair, protruding lips, and flattened nose; they are fond of ornament, and, above all, of dancing; they live for the moment, and are careless and improvident, passing quickly from one mood to another, from the most exuberant joy to melancholy or anger. The yellow *Hottentots* of the south-eastern corner of Africa have now become in great part a mixed or mulatto people, speaking the Dutch of the Cape. Lowest of all in African humanity are the wandering *Bushmen* of the Kalahara deserts, living in holes and caves like wild animals, without dwelling or property, or any domestic animal, save, it may be, a miserable dog.

23. Some negro tribes have remained almost at the same stage as the Bushmen, living on game or fish, and occasionally also on their fellow-men, but the most of the negroes seem to be half nomads, joining a little cultivation of the soil to their huntsmen's life. In the Soudan, negro life reaches its highest stage. There we find them as agriculturists and cloth-weavers, and traders in busy market-towns, exchanging the ivory and ostrich feathers and grain of their productive country for the salt mined in the Sahara.

24. *Religion*.—The *Copts*, a small remnant of the ancient Egyptians, ascribe their conversion to the Apostle Mark, and are Christians. Their highest dignitary is a patriarch of Alexandria, and they are exceedingly strict in their religious observances. The Abyssinians are also nominally Coptic Christians, and their *abuna* (father or patriarch) is consecrated at Alexandria, but their whole religion consists in the performance of empty and unintelligible ceremonies. Throughout the rest of northern Africa, and along the eastern coast, as we have noticed, the Arabs have spread Mohammedanism far and wide, so that perhaps a quarter of all the inhabitants of the continent have received this religion. Even at Lagos, on the West African coast, there may be seen followers of Mohammed, who, having made the long pilgrimage across the continent and the Red Sea to Mecca, have become entitled to the green turbans they wear.

At the present day the remarkable negro people called the Fellatah, or Fulbe, converted to Mohammedanism in the middle of the eighteenth century, are spreading their faith in Central Africa by force, as the first followers of the prophet were wont to do, by carrying on religious wars with the surrounding pagans; they have formed great empires in the western Soudan, some of which are still increasing in extent and power.

The mass of the peoples of South and Central Africa can scarcely be said to have any religion. They do not adore the sun, or any other object or *idol*.

but their belief is in malign spirits, and in charms or "fetishes," which are mainly of use to counteract their evil designs.

25. **Government.**—British rule has now extended over a large part of the promontory of Southern Africa. In the north the French rule Algeria and the colonies on the Senegal. The Egyptian (Turkish) dominion has spread south along the Nile valley nearly to the equator. On the east coast the Arab Sultan of Zanzibar holds nominal sway from his island over a long stretch of the coast-land; and both in the Atlantic and on the Indian Ocean the Portuguese have large possessions.

Within the vast remaining area of the continent the power of government, where any prevails among the native tribes, is most frequently that of a simple barbarous despotism. The captives of war, or the victims of frequent man-hunting expeditions, are sold as slaves. In some states, such as Dahomey, wholesale murder is one of the chief features of all state ceremonies. The despotism appears to be limited in some cases by a sort of aristocracy formed of the head men of villages or tribes, who are consulted on important affairs by calling them together in a "palaver," or native parliament. Slavery is everywhere an institution of native growth, not introduced from abroad, so that it may be fairly said that one-half of the inhabitants of the continent are the slaves of the other half. A vigilant blockade of the coasts by British vessels has now all but suppressed the export of slaves, but this does not affect the native slave traffic in the interior, and it is evident that slavery will not cease till the Africans can be raised to such a point of civilisation that they will abandon this traffic of themselves.

THE BARBARY STATES.

1. Previous to the eleventh century, when the great Arab immigration took place, the Hamitic people, known as the Berbers, probably from the Greek and Roman term *Barbari*, occupied the southern coast-lands of the Mediterranean from Egypt westward to the Atlantic, and from them the countries into which this region is now divided are still known collectively as the Barbary States.¹

2. If we look at the map we cannot fail to notice how sharply defined from the southern region is the mountainous district which occupies the western half of the coast-land washed by the Mediterranean, extending from the Gulf of Gabes and Cape Bon, which points towards Sicily, to Cape Ghir on the Atlantic coast in the west. This island-like mass, rising between the sea and the wastes of the desert beyond, is called by the Arabs *Maghreb* or "the west," and comprises the chief portions of the empire of Morocco, the French possession of Algeria, and the Turkish regency of Tunis.

3. This highland is formed in the west by the *Atlas* range, which extends in a curve from Cape Deir, projecting into the Mediterranean, round to Cape Ghir on the Atlantic. The Atlas attains its highest points in *Jebel Mulsin*

	Area in sq. miles.	Population.
1 Morocco	313,600	6,370,000
Algeria	287,500	2,870,000
Tunis	44,900	2,100,000
Tripoli, with Fezzan and Barca . .	399,000	1,010,000

(11,400 feet), and *Jebel Ayashin* (12,000 feet), and descends gradually by terraces to plains along the Atlantic coast-land, except in the north, where a branch range skirts the Mediterranean coast, running out to close the narrow Strait of Gibraltar, and to form the steep northern face called the *Rif*.

Farther east in Algeria and in Tunis the highland takes the form of a broad high plateau, enclosed between mountain ranges on the seaward and inner sides. The land rising from the Mediterranean up over the coast hills to the outer bordering range is called the *Tell* country, and is the most fertile and valuable part of those two states. Beyond the maritime ranges, the summits of which reach an elevation of about 6000 feet, monotonous bare table-lands, at a general height of about 3800 feet above the sea, are reached. This enclosed belt extends all the way from the inner side of the Atlas to the mountains of Tunis in the east, and is dotted over with a long series of brackish lakes or salt marshes called "sebkhas." The herds in this region are watered at the stagnant pools, which remain in the hollows of the rocks after the winter rains; and these are called *Ghedir*, or traitor, by the Arabs, since no dependence can be placed on their supply.

On the southern side of these bare plateaus there rises another bordering chain of heights, extending all along the inner edge of the highland from Tunis to Morocco, where it forms a parallel inner range to the southern portion of the Atlas. One of the groups of this range is that of the *Aures* mountains in Eastern Algeria, which has the highest summit in this region, *Mount Sheliach* (7570 feet). From the summit of this mountain a grand panorama opens out over the wide plateau, with its glistening "sebkhas" on the north, to the summits of many mountains east and west, and down southward over the pale-coloured broken declivities of the mountains to the distant lowlands of the Sahara.

4. The three states of this region also claim as within their limits a considerable part of the Sahara region, which lies southward behind the mountains. To this the southern border range descends almost abruptly. In the east, immediately at the base of the mountains, lie the depressed marshes and quicksands, which extend inland from the head of the Gulf of Gabes for a distance of 240 miles. The largest of these is the *Shott Kebir*, the ancient "Palus Tritonis;" the farthest inland is named the *Melghir*, and its surface is 49 feet beneath the level of the Mediterranean. A rocky barrier, only about ten miles wide, separates this chain of depressions from the Mediterranean, and a scheme for cutting through this obstacle and allowing the sea-water to flow in over them has recently been considered by the French Government. Were this done, a great pond about as extensive as Lake Ontario might be formed, and the evaporation from its surface would perhaps tend to restore fertility to the waste lands round it, but it would be too shallow for the purposes of navigation. Farther west, the region of the Sahara embraced within the boundaries of Algeria and Morocco is not uniformly desert, and lies at elevations of from 500 to 2000 feet above the sea. Its general character may be understood from the native names for those parts of it which present corresponding features:—(1) The inhabited portions are named "fiâfi;" these are oases round clusters of wells, to which all living things are drawn for shelter from the sun and the hot winds, under the palms or fruit-trees which grow luxuriantly wherever there is water. (2) "Kifar" is the name given to the bare plain-country, which, when moistened by the winter rains, changes its bare and sandy aspect for a time, and becomes covered with spring herbs; hither the nomadic shepherds, who have been camped round the oases during the summer, come in spring to pasture their flocks. (3) "Falât" is the name given to the vast stretches of sterile and naked country covered with ridges of blown sand like solid sea-waves. All these three are intermixed, and from the bordering chain

of mountains on the north numberless torrents descend through a network of deep ravines to be quickly dried up in the lowland.

MAROCCHO.

5. The most westerly of the Barbary States, called Marocco, or by the Arabs *Maghreb-el-aksa*, "the far west," reaches from the Riff coast of the Mediterranean and the Atlantic on the outer side of the Strait of Gibraltar, southward over the Atlas range to the desert beyond, covering an area somewhat larger than that of France.

It has thus two slopes, the one north-westward to the plains which border the Atlantic and to the Mediterranean, the other south-eastward to the desert. These present a great contrast in landscape and in climate. The winter rains of the northern slope last for nearly five months (October to February), but on the southern only for one. The Atlantic coast slopes are thus fertile and habitable country, capable of producing large crops of barley and millet, as well as orchard fruits; the southern little better than desert, in which the date-palm is the main support of life; while between there is a broad belt of bare mountain steppes and rocky heights.

On its northern slope the *Muluya* flows down along the eastern side of the Atlas to the Mediterranean, and the *Sebu*, *Bu Regreg*, *Um-el-Rhea*, and *Tensift*, to the Atlantic. Fed both by the winter rains and in summer by the melting snows of the Atlas range, most of these streams keep up a constant flow, giving an unfailing supply of water to the lowlands. The streams of the southern slope, on the other hand, are torrents which gather towards the great *Wadi Draa*, a channel longer than that of the Rhine, which skirts the southern border of Marocco, and is only filled with water after the winter rains, presenting a dry bed at other seasons.

6. **People.**—In Marocco the *Berbers* still far outnumber the *Arabs*, though the latter have taken possession of the most fertile maritime region of the country from the Strait to the Tensift river. The Arabs or *Moors*, descendants chiefly of those who overran Spain in the eighth century, and were driven thence in the fifteenth, are essentially townsmen and traders; the *Berbers*, occupying four-fifths of the land, live chiefly in tents, or tent villages, called *Dwars*, and support themselves by husbandry. Their language, called the *Tamasirht* and *Shellah*, is spoken all across North Africa. Slim sinewy forms and sharply-cut features, black fiery eyes, and black hair, are characteristic both of Arab and Berber. Jews form a large and important section of the population; they are chiefly the descendants of those who were expelled from Spain and Portugal in the end of the fifteenth century, and are browbeaten and despised. There are also a small number of *Negroes* in Marocco.

7. **Government.**—The highest ruling class in Marocco is that of the *Shirfa* Arabs, who claim descent from Mohammed. To this class the Emperor or Sultan of Marocco belongs, and he is widely regarded as the lawful caliph or spiritual chief of Islam. His government, so far as it extends, is absolute and despotic; but fully two-thirds of the country on the Atlas range and beyond it is virtually independent of his authority and in the hands of Berber mountain chiefs. The divisions of the country generally recognised are those

of *Fez* and *Marocco* proper on the north-western slope, of *Sus* between the Atlas and the Sahara border ranges south of it, and the district of the *Wadi Draa* in the Moroccan Sahara.

8. **Chief Towns.**—The Sultan keeps court alternately at the cities of Morocco, Fez, and Mequinez. The city of *Marocco* (50,000) is situated on the Tensift, near the base of the Great Atlas, and is surrounded by immense gardens and orchards. It is walled round and flanked by ruinous turrets; the streets leading from the chief gates are wide, but in other parts of the city are narrow and filthy. The pride of the city is the Kutubia or mosque of the booksellers, which has a minaret of 220 feet in height. *Fez* is a larger city in the north, finely placed between two hills on a small tributary of the Sebu, and enclosed by a turreted wall. *Mequinez*, the third imperial city, lies farther west. The most important outlets of the country are *Tangier*, near the outer entrance of the Strait of Gibraltar; the double city of *Rabat-Saleh*, at the mouth of the Bu-Regreg, once the resort of the Corsairs, who were the terror of all the neighbouring seas; *Azamor* or *Mazagan* at the mouth of the Um-el-Rhea; and *Mogador*, the port of the city of Morocco.

In the Moroccan Sahara the centres of population occur in the wadies or water channels, which drain the southern slope. Most important of these is the town of *Abuam*, in the oasis of Tafilet, east of the Upper Draa.

9. **Trade.**—There is no native industry in Morocco properly so-called beyond that of leather-making all over the country, and of the manufacture of the red caps which are named from the imperial town of Fez. An active traffic is maintained in importing European goods, such as cottons, trinkets, gunpowder and arms, glass, sugar, etc., and in sending these by caravans into the interior of Africa by way of the Sahara. These caravans form great movable markets: on their way across the desert they take loads of salt, which, with the other articles, are exchanged in the Sudan for gold-dust, ostrich feathers, gums, and slaves, to be brought to Morocco.

ALGERIA.

10. Though far superior to France itself in extent, the territory of Algeria, extending between Morocco and Tunis, and over the table-lands into the Sahara, has a comparatively small extent of ground capable of supporting a close population.

11. **Climate.**—Its arable and cultivable districts are almost restricted to the Tell country or the Mediterranean slope. There also the climate is uniform and resembles that of south Italy or Spain, four seasons, succeeding each other gently, being distinguishable. But in the Sahara region south of the border range the variations of temperature are excessive, and the summer heat very oppressive.

In the middle of September the beneficent autumn and winter rains begin, and the whole land is speedily covered with the richest vegetation. Then also the streams which flow northward to the Mediterranean fill out into torrents. The largest of these by far is the *Shelif*, which springs in the inner side of the southern mountain range, and finds its way across the plateaux and between the northern hills to the Mediterranean.

12. **Products.**—The vegetation of the Tell country bears a striking resemblance to that of the Mediterranean borders of Europe: here, as there, flourish the olive, laurel, orange, and citron, the oak, cedar, and pine, the almond and fig-tree, myrtle, aloe, and oleander, and the valuable cork-tree.

Among the products of the upland region of Algeria which have been turned

to useful account are the "halfa" and esparto grass, which are now largely used in England for paper-making; a dwarf palm has also been found to be useful in the manufacture of a sort of vegetable hair for the Paris market. Wheat and durra, and potatoes introduced by the French, are now cultivated to a considerable extent, and the vine succeeds admirably on the mountain slopes up to an altitude of 3000 feet.

Few countries are richer in iron than Algeria: its productive mine of *Mokta-el-Hadid*, near Bona, yields about 400,000 tons a year. Lead, copper, zinc, antimony, and cinnabar, are also widely distributed.

13. **People.**—The population of Algeria is a much less numerous one than that of Marocco, consisting mainly of the same elements. But the *Berbers* or *Kabyles*, as they are named here, are now far fewer than the *Arabs*, and have been driven back almost exclusively to the higher table-lands. The *Kabyles* are of settled habits and good agriculturists, but passionately fond of their native land, and brave in warfare; they have ever remained the implacable foes of the *Arabs*, though both are Mohammedans in religion. The *Arabs* on the other hand are divided, as in Marocco, into the *Moors*, who dwell in towns, and the *Bedouins*, who lead a nomadic pastoral life, and whose whole nature seems to rebel against civilisation and sedentary habits.

Of the large number of Europeans now introduced into the country, about a half are French, the rest Italians, Spaniards, and Anglo-Maltese, with a few Germans; but the plan of colonising the country with European settlers has not proved successful.

14. **Government and Chief Towns.**—Algeria is divided into three departments corresponding to its chief towns, of Algiers in the centre, Oran in the west, and Constantine in the east. Each of these is subdivided into civil and military districts.

Algiers, the seat of government, is magnificently situated on a bay of the Mediterranean, the modern or European town is built with broad streets along the shore, the old or Arab town above with crooked passages and high bare walled houses, with narrow gratings for windows. The summit of the hill is occupied by the Kasbah, the ancient fortress of the Deys of Algiers. *Constantine*, one of the ancient cities of Numidia, named after the Roman Emperor Constantine the Great, lies on a rocky plateau of the northern border range. The harbours of *Oran* and *Mostaganem* lie west of Algiers, those of *Dellys*, *Philippeville*, *La Calle*, and *Bona*, on the east towards the Tunisian coast.

Algiers and Oran, as well as Constantine and Philippeville, have been united by railways.

15. Among the achievements of the French since their occupation of Algeria may be noted the draining of a large marshy lake called the *Hallula*, not far from the city of Algiers, by which 34,000 acres of excellent cotton-growing land have been recovered. Extensive plantations of *eucalyptus*, or blue gum, have also contributed much to the amelioration of large districts. Over in the bare central plateau, and in the Sahara region also, large tracts have been reclaimed by the sinking of artesian wells, from which an abundant supply of water is obtained for irrigation, though the water of some of them proves to be saline and undrinkable.

TUNIS.

16. The most easterly and smallest of the three states of the western Berber region scarcely differs at all from the others in its physical aspect, or in the elements of which its population is composed. It reaches south like these, over the highland region of the

eastern terminations of the Barbary plateau, into the northern Sahara, but it has the advantage of an eastern as well as a northern coast-line, and its shores are extended by the gulfs of Tunis, Ham-mamet, and Cabes. In area it is about a fourth part larger than Scotland, and it is of great interest as containing the ruins of ancient Carthage, and as corresponding to the *Africa* of the Romans.

17. **Products and Industries.**—Little agriculture is carried on in Tunis, though many parts of the land are capable of tillage: olive groves are characteristic of the northern or more hilly districts; date plantations give their name to the "Belad-el-Jerid," as the southern lowlands are called. Cattle are reared in large numbers, and the native manufactures of silks, "burnous" mantles, red caps, woollen goods, leather, and pottery, are very considerable.

18. **People.**—The same antipathy as in Algeria, between the Berbers and the Arabs, prevails also in Tunis. The Moors or town Arabs marry solely among themselves; the Berbers are kept apart, and are here sorely oppressed; the Jews of Tunis also live to themselves. Here we find also a mixed race, the offspring of Turks and Moors, called Kulugli.

19. **Government and Chief Towns.**—From 1595 onward Tunis has been under the sovereignty of Turkey; but by Firman of October 1871 the Sultan gave up his ancient right of tribute. Its "Bey" or regent, however, still receives investiture from Constantinople, and may neither make war nor treaties of any kind, nor cede any part of his territory, without the consent of the Sultan. Under the Bey the country is divided into eighteen provinces, each ruled by a governor appointed by him. At present (1882) Tunis is occupied by a French army, and the Bey is virtually a vassal of France.

The political capital is the walled city of *Tunis*, which lies along the shallow islet of its gulf, called the Bahira; its narrow streets are thronged with varied and picturesque crowds. Through its port of *Goletta*, connected with it by a short railway, it carries on an extensive commerce with Marseilles and Genoa and the Levant ports. About two miles north-west is the *Bardo*, a little town surrounding the palaces of the Bey. The site of famous Carthage is thirteen miles north-east of Tunis on Cape Carthage.

The spiritual capital of Tunis is the city of *Kairuan*, which lies about seventy-five miles south of the political capital in a barren plain. This is one of the sacred cities of Islam, and formerly neither Jew nor Christian was allowed to reside within its walls. At present it is occupied by a French garrison.

Besides the Goletta of Tunis, the chief ports are *Biserta* on the north coast, and *Susa*, *Monastir*, *Mehdia*, and *Sfax*, on the east, the last-named being the chief town and outlet of the south of the country, united by telegraph with the capital.

20. Coral is found abundantly all along the coast of Tunis, and the tunny fish is captured in great numbers during its migrations along the shores in May or June by means of great traps composed of barriers of nets called "tonnaras."

TRIPOLI.¹

21. The country of Tripoli, which forms a vilayet or province of the Ottoman Empire, reaches along the Mediterranean coasts between Tunis and Egypt, from the Gulf of Cabes round that of

¹ *Tripolis*, the "three cities," referring to the ancient Carthaginian towns of Sabrata, Oea, and Leptis Magna, along the *Syrtis*, or the Gulfs of Cabes and Sidra.

Sidra, to the plateau of Barca in the east. Inland it extends southward into the desert to near the northern tropic, thus occupying a space nearly four times as large as Great Britain.

22. *Relief*.—Its sandy coasts are generally level or undulating, but the land rises, beyond fertile valleys, to a range called the Ghurian and the Jebel es Soda or Black Mountains (2800 feet), behind which a great bare and stony waterless plateau or "hammada" extends away to the south. Beyond the hammada the land descends again to the oasis land of Fezzan. The eastern region of Barca, ancient *Cyrenaica*,¹ projecting into the Mediterranean, is a rocky table-land with steep slopes to the sea.

23. *Products*.—Excepting on the outward slopes and valleys of the mountains, the whole land partakes of the character of the Sahara in climate, and in its landscape of bare grey desert, and cloudless blue sky: the fertile valleys, supplied with water by periodically flowing streams from the hills, yield grain and fruits, tobacco, cotton, silk, and saffron, in abundance, and the southern ones have extensive plantations of the date-palm.

24. *Inhabitants and Government*.—The people are chiefly *Berber* tribes, mixed with Arabs in the maritime region and with negro *Tebus* in the south, and are Mohammedan in religion, the few *Turks* holding the offices of Government. The Governor of the vilayet resides at the capital town of *Tripoli* on the west; a subordinate governor rules the great southern province of Fezzan from the oasis city of *Murzuk*. Since 1879 the eastern region forms a detached province, named from its chief town of *Benghazi*, and is directly dependent upon Constantinople. Formerly it was placed under the Governor of Tripoli.

25. *Chief Towns and Trade*.—*Tripoli*, the capital, standing on a low rocky tongue of land on the coast in the western part of the territory, is the great mart of trade in the products of the Sudan brought hither by the main caravan route across the desert from Bornu, and at the same time supplies the interior with European goods. The trade in ostrich feathers is the most important of all. The direct route to the Sudan from Tripoli leads south across the Ghurian hills, and over the hammada beyond, down into the cluster of garden-like oases of Fezzan. *Murzuk*, in one of these, is inhabited mainly by traders. Another important route is that which leads to the trading town of *Ghadames* on the border of the Algerian Sahara. *Benghazi*, on the north-west coast of the plateau land of Barca, is the second port of the province, and is the outlet of an important caravan route to Wadai in the Soudan.

SAHARA.²

1. All the immense region of northern Africa between the Nile valley and the Atlantic is characterised generally by deficiency of rainfall, and consequently by deficiency of vegetation; and we know it by the Arabic word *Sāra* or *Zahrah*, meaning "desert," modified into the form *Sahara*. This desert belt of the continent reaches southward from the inner slopes of the plateau of Barbary and the coast of the Mediterranean in Tripoli for an average distance of 1200 miles, to where its sands give place gradually to

¹ Or *Pentapolis*, from the "five cities" of Hesperides or Berenice (now Benghazi), Barca, Tauchira, Cyrene, and Apollonia, founded by Greek colonists.

² Area 3,550,000 square miles. Population estimated at nearly 5,000,000. Of this total, 1,164,000 sq. m. with 2,000,000 inhabitants, are included in Barbary.

pastoral grassy country, and then to the fertile and well-watered lands of the Sudan. The desert region thus embraces a vast area, which may be compared to twelve times that of France.

2. **Physical Features.**—Sand heaps or “dunes” are so universal on the northern borders of the Sahara that till recently the whole region was generally pictured as a huge sea of sand. These dunes form a great belt of more than 2000 miles in length, and from 200 to 300 miles wide, reaching from the coasts of the Syrtes away to the Senegal river and the Atlantic coast. Now that European travellers have passed this great northern barrier, the interior of the desert is found to have a very diversified surface, and to consist in great part of table-lands, which are called “hammada” where they are strewn with sharp stones, and “serir” where they are covered with small pebbles. In contrast to these are low-lying plains or depressions between the plateaus, generally termed “hofra” or “juf,” but the only true depressions beneath the sea-level yet known in North Africa are those of the marshes to the south of the plateau in Tunis, and some spots of small extent in the Libyan Desert.

An important feature of the Sahara is that of its “oases,”¹ or green habitable spots formed wherever water is present, even if it be brackish or saline. This fact shows that the aridity of the Sahara is not due to any peculiarity of its soil, but simply to the deficiency of moisture over the greater part of its area. The oases are found either at the termination of the periodically filled water channels which descend from the higher grounds, as along the inner base of the plateau of Barbary, or in the centres of the depressions, where the scanty moisture supply filters down to the lowest central point of the basin, as in the oases of the Libyan Desert.

3. Within the enormous area of the Sahara there is no permanently flowing stream. Among its greater water channels or “wadys” are the *Dræa*, which turns along the southern border of Morocco from the inner mountain ranges to the Atlantic. Two of the most extensive channels formed by the agency of water within the Sahara are those called the *Igharghar* and *Wady Mia*, which have their origin in the plateaus between 23° and 24° N., and which extend directly northward for 750 miles, to terminate in the chain of salt-marshes south of Tunis. In many cases, though these deeply furrowed channels appear dry, water is obtainable by digging down into them, showing that it filters along under ground. Dry lake beds, called “sebkhas,” are also characteristic of the Sahara; sometimes the dried mud within them has contracted into regular hexagonal figures; at others they show a clear sheet of salt.

4. **Climate.**—The Sahara falls within the line marking an average annual temperature of over 80°, but the great feature of its climate, as of all bare desert countries, is that of the excessive difference of temperature between day and night. In the intense heat of mid-day the sand and rock surface has been found to rise to a temperature of nearly 200° F., but the absence of moisture in the air favours rapid radiation from the bare surface, so that at night the thermometer not unfrequently marks below the freezing point.

The northern border is sprinkled by winter showers in some parts of the highlands between October and March, but in the lowlands rain is all but unknown, and twenty years may pass without a drop falling. The tropical showers, drawn in from the Indian Ocean and the Gulf of Guinea, which water the Sudan so abundantly, reach into the Sahara region only in the months of August and September, as far as some of the central hilly regions. We have already noticed that the north-east is the prevailing dry wind of the Sahara.

¹ Probably from the Coptic *ouahé*, meaning “inhabited place.”

Hot winds blowing outward seem to make a tour of the northern part of the continent during the year, occurring as the *Khamsin*, or fifty days (April till June), in Egypt; as the *Sirocco* of Algeria and south Italy (in July); as the *Shume* of Morocco (in August and September); and as the *Harmattan*, charged with dust, on the Atlantic and Guinea coasts (in December, January, and February).

5. *Products*.—The tree of the desert region is the date-palm, which finds a favourite habitat in its arid soil and dry climate, and which is the mainstay of the inhabitants of the Sahara: rice, maize, and barley are grown in some parts of the oases, where a few acacias and ferns appear. A thorny evergreen shrub serves as fodder for the camels in passing through some of the dreary regions between. A few gazelles and antelopes, hares and foxes, the ostrich, vulture, and raven, are almost the only animals of the desert. Salt is the great mineral product of the Sahara; in some districts, such as that of *Taodeni*, midway between Timbuktu and Morocco, and in *Bilma*, on the route from Bornu to Tripoli, it is regularly mined.

6. *People*.—The thinly-scattered inhabitants of the Sahara fall into three main divisions—(1) The *Moorish* (Arab) and *Berber* tribes of the western region, chiefly nomadic herdsmen and robbers, though settled under sultans in some parts of the south-west; (2) the *Tuareg* of the central Sahara, a Berber people, tall and handsome, the horse-guards of the caravans in their passage across the desert, wearing a shawl, called the "litham," wound round face and head as a protection against the blown sands of the desert; (3) the *Tibbus*, a pastoral people inhabiting the eastern portion of the desert, believed to be nearly allied in race to the negroes of the south.

7. Among the many more or less definitely known countries and kingdoms within the vast area of the Sahara, are those of *Tiris* on the Atlantic margin, a desert country held by the nomadic tribes of the Uled Delim: *Aderer*, south-east of it, where the Yaya-ben-Othman Moors are dominant; this is a hilly country, possessing considerable herds of camels, sheep, and oxen, and great mines of rock-salt near its chief town of *Shingeti*; the countries of the *Asgar* and *Ahaggar Tuaregs*, in the plateaus which rise beyond the sand-belt south of the Algerian Sahara; the oasis land of *Tidikelt*, in the north-west of the Tuareg region, where from 300 to 400 little oasis-states form an independent confederation of republics; the hilly kingdom of *Air* or *Asben*, near the centre of the Sahara in the Tuareg division, ruled over by a sultan, who resides at *Agades*; and the Tibbu sultanate, which occupies the mountainous country of *Tu* or *Tibesti*, towards the east of the Sahara, with the capital town of *Bardai*. This last kingdom is occupied by the Reshade tribe of the Tibbus, a fierce, treacherous people, fanatical in their adherence to Mohammedanism. Here in Tibesti occurs the highest known point of all the Sahara region, the broad-backed Mount Tarso, from which the peak of Tuside rises to an estimated height of 7900 feet. From the slopes of these mountains, valleys and torrent-beds filled with bright green acacias reach down on all sides to the surrounding desert; here also the date-palm is the chief resource of the inhabitants.

8. *Trade*.—The great caravan routes and lines of communication across the Sahara take generally a north and south direction, from the fertile countries of the Sudan on the south to the nearest ports of the Mediterranean. In the west an important route unites Timbuktu on the Niger with Taflet in southern Morocco. Several routes from Morocco, Algeria, and Tunis, centre in the busy markets of the oasis land of Tidikelt, and pass thence also to Timbuktu; along this line two great caravans are despatched every year to the south. Farther east lies the route from Ghat on the east of the Tuareg plateau, through Asben to Sokoto in the Sudan; and still farther east the greatest thoroughfare of

the Sahara, the track which leads from Tripoli, through Murzuk in Fezzan, by the salt-mines of Bilma to the countries round Lake Chad.

The commerce of the Sahara consists mainly in the transport of ostrich feathers, slaves, gold dust, and ivory from the Sudan northward to the Mediterranean ports, and the conveyance thence back across the desert, of manufactured goods, such as cottons, cutlery, and trinkets of all sorts, to the negro countries in the south. It is estimated that fully 10,000 slaves pass northward by the Murzuk route from Bornu every year, and this traffic has continued so long, and is accompanied by such hardships, that the route might be followed with no other guide than the bleached skeletons of those who have fallen during the terrible march. The salt of the Sahara beds also gives rise to considerable independent traffic. From Bilma, for example, the salt-blocks are carried by camel caravans, sometimes of 1000 animals, to the Sudan, to be exchanged there for grain.

EGYPTIAN DOMINION.¹

1. From its ancient limits in the Delta and along the banks of the Lower Nile, crowded with monuments of art in long past ages, the territory of Egypt has been enormously extended in recent years, till its ruler, nominally a vassal of the Ottoman Empire, has become the most powerful sovereign in all Africa. It is impossible to estimate the area subject to Egypt with accuracy, since its boundary in the western desert towards the Sahara is undefined, and in the south the Egyptian troops are still extending their conquests towards the equatorial lakes. The western limit, however, is now generally regarded as embracing the Libyan desert as far as the oasis of Siwah on the borders of Tripoli; and the eastern reaches to the Red Sea coast, and the head of the Gulf of Akaba, including the peninsula of Sinai. From the Mediterranean on the north, Egyptian territory now extends southward over the greater part of the Nile valley as far as the Albert Nyanza. From Darfur on the west it extends across to the base of the mountains of Abyssinia, and round the north of that country to the southern shores of the Gulf of Aden, and inland thence to Harar. If we compare the Egyptian dominion with our island of Great Britain in extent, we find it nearly ten times as large.

2. Within the area thus sketched out we may distinguish three divisions—(1) The northern, or *Egypt proper*, where the narrow green strip of the Nile banks and its wondrously fertile delta are shut in on both sides by the arid plateaus and mountains of the Libyan and Arabian deserts. (2) *Nubia*, the middle region, stretching south from about the northern tropic to the

	Pop.	Area in sq. miles.
¹ Egypt proper, with the Libyan and Arabian deserts	394,000	5,600,000
Nubia	335,000	1,000,000
Egyptian Sudan (with Dar Fur and Kordofan)	424,000	10,800,000
	<u>1,153,000</u>	<u>17,400,000</u>

base of the mountains of Abyssinia, and presenting in its landscape a gradual transition from the arid sands of the desert to the grassy steppe lands which are characteristic of the greater part of its surface, and to more luxuriant vegetation on the south. (3) The *Egyptian Sudan*, a well-watered region, becoming more and more fertile and productive still towards the south, till it enters the equatorial belt, in which a vegetation of tall forest trees becomes general.

3. *Climate*.—These divisions naturally correspond to the climates which have given them their varying landscapes. The excessive heat and drought of the Sahara prevail in Lower Egypt. Though the coast of the Nile delta receives a few winter showers, there is only an average of thirteen rainy days in the year at Cairo in the apex of the delta; and a little farther south rain becomes almost unknown, though heavy dews partly supply its deficiency, and the great heat of summer is tempered by northerly winds which then blow up the Nile valley. The dry region extends southward to where the Nile receives its last tributary, the Atbara. This is the limit to which the tropical rains extend, and as from this point southward these rains become of longer and longer duration, the landscape gradually changes again from bare sunburnt steppe to rich evergreen tropical vegetation. In the region of the Albert Nyanza rain falls in every month of the year except January and February.

4. *Products*.—The cultivable land of Lower Egypt¹ in the delta and along the banks of the Nile represents only about a twentieth part of the area of this division, and is dependent for its fertility on the inundations of the river alone. Far and wide over the level delta in harvest time, there wave fields of wheat and rice, sugar-cane, cotton, and indigo. Other parts are rich pastures, dotted with herds of cattle, asses, sheep, and goats. Trees have now been planted along the roads, and are in some parts set in thick plantations. Above the delta the most productive district of Lower Egypt is that of Fayum, lying west of the river valley round a lake called the Birket el Kerun (ancient Lake Moeris), which is fed by a canal from the river. Here, besides grain and forests, there are large plantations of roses cultivated for the valuable "attar."

Beyond the river valley, in the deserts, groves of date-palms here and there are the ornaments of the landscape. Far up the Nile past the desert belt in Nubia the baobab and the deleb palm become common near the river, while at a greater distance from it the acacias are the commonest trees of the steppe bush. Higher up still the river banks become closed with dense walls of reeds, and floating islands of matted sod obstruct the navigation; inland grassy steppes reaching away to the horizon become more thickly covered with trees, and the land becomes park-like.

Durra or millet, with coarse tall grass, is the cultivated grain of all the southern tropical region. Here crocodiles and hippopotami abound in the rivers, rhinoceroses in the jungle, the giraffe and the elephant in the park-like lands—the last giving the ivory which is now the great object of trade in all this region.

5. *People*.—The great mass of the people in Lower Egypt are known as *Fellaheen* or "ploughers," and are the descendants of the old Egyptians and of the Arab invaders of the land. Portions of the Egyptians as well as of their conquerors, however, remain unmixed. The former are the *Copts*, the clerks of Egypt, who profess Christianity; the pure *Arabs* are represented mainly by the Bedouins, but some of these have exchanged their nomadic life for a settled one

¹ The cultivable land of Lower Egypt amounts to about 11,800 square miles in all. Of this 6600 square miles are in the delta, 5200 square miles along the river banks as far as the First Cataract, and round the lake of Fayum.

in houses. The Arabs are mainly employed in escorting trading caravans, and as breeders of cattle, sheep, and camels. *Jews* are held in great contempt in Egypt by the Mohammedans. The *Gypsies* also have diminished in numbers, and are now only met with at fairs and markets as conjurors or fortune-tellers. The *Europeans* in Lower Egypt, who are natives principally of Greece, Italy, France, England, and Germany, nearly monopolise the commerce and navigation of the country.

The inhabitants of the Nubian deserts and of the northern regions of the Egyptian Soudan are mainly nomadic *Arabs*. Such are the Ababdeh and the Bisharin, who stride across the plains with erect and graceful figure, armed with spear and buckler, or are mounted on trotting dromedaries; and the Baggara Arabs, who reach south along the left bank of the Nile to near the tenth parallel. The *Hammej* tribes, on the opposite side of the river towards the base of the Abyssinian highland, seem to occupy a middle place between the Arabs and the Negroes of this part of Africa. Immediately south of the tenth parallel along the Nile banks we come upon the fierce jet-black *Negro* tribe of the Shilooks; beyond these the whole of the Upper Nile basin is occupied by Negro tribes, among whom the Nuehrs, the Dinka, Bongo, and the cannibal¹ Nyam-Nyams, on the south-western border of the Nile basin, are the most prominent.

6. **Government.**—The title given to the head of the ruling dynasty and his successors was the Turkish one of "Vali" or Viceroy, but the late ruler contrived to restrict very considerably the sovereign rights of Turkey. In 1866 he obtained the Arabic title of *Khediv* or "King" of Egypt; and in 1873 the right of concluding treaties with foreign powers and of maintaining an army; so that he was practically an absolute sovereign. An annual tribute of £720,000 is paid to the Porte. The administration of Egypt is carried on by a Council of State of four military and four civil dignitaries appointed by the Khediv. The army, raised by conscription, amounts to about 20,000 men, besides several regiments of Negro troops in the Sudan.

7. **Divisions and Chief Towns.**—*Egypt proper*, which extends up the course of the river as far as the second cataract at Wadi Halfa (22° N.), is divided into the three districts called "Masr el Bahri" or Lower Egypt, "El Wustani" or Middle Egypt, and "El Saïd" or Upper Egypt, and these are subdivided into several administrative provinces.

*Cairo*¹ (327,000), the capital of Egypt, and the greatest city in all Africa, lies on the left bank of the river, a short way above the apex of the delta, and is about two miles in length by one in breadth, surrounded by a wall and commanded by a citadel. It forms a sea of houses, with narrow crooked streets, over which the slim tapering minarets and cupolas of the hundreds of mosques rise like a forest. A crowd of people of all nations moves through its streets and bazaars in chaotic confusion and with continual din. Railways lead to *Alexandria* (166,000), the great seaport and emporium of the commerce of Egypt, close to the site of the ancient city founded by Alexander the Great, and to *Damietta*, on the eastern branch of the Nile. *Tanta* and *Rosetta* are also important towns of the delta.

A railway also leads across the northern corner of the Arabian desert to the ancient port of *Suez*, at the head of the chief northern gulf of the Red Sea, and this was formerly a main link in the great overland route from Europe to India. In 1869, however, the great enterprise of the cutting of the Suez ship-canal from the Mediterranean to the Red Sea was completed, and now about 1500 great ships pass through this channel every year. *Port Said*, a flourishing modern town, stands where the breakwaters guard the Mediterranean

¹ Properly *El Kaheirah*, the "victorious;" founded 969.

extension of the canal. Farther it passes *Assuan*, and a new branch, the head-quarters of the Delta Company, and after the wider extension of water which fills the basin of the former "water-lake" has been gained, it opens into the Red Sea at *Suez*, leaving a numerous miles south of *Pelt* *Suez*.

Going to the Nile from *Cairo* the first objects that attract attention are the great pyramids of *Giza* and the ruins of *Memphis*. From *Assiut* *Suez*, the first town of importance above *Cairo*, a branch railway leads west to *Minia* and *Fayoum*, in the fertile basin which surrounds the ancient *Morris* lake. At *Suez*, in Upper Egypt, the present terminus of the Nile railroad is reached; and from *Suez* will follow up a track, four days' journey long, some 200 miles across the Arabian desert to the small port of *Kassir* on the Red Sea. At *Assuan*, near the northern original line, the first outcrops of the Nile in ascending are formed between granite hills. These are passed with difficulty in the season of low-water, and at the second cataract of *Wadi Halfa* 20° N. the true navigation of the river upward is ended.

3. In *Sudan* the provinces of *Dongola* and *Barber* stand in direct connection with the Government of Egypt proper. From *Wadi Halfa* the head of the free navigation, a Nubian railroad is now 1888, being constructed along the river bank to the small town of this division called *El Ordah* or *Dongola* (19° N.), whence the river is again navigable upward to the important station of *El Imbaba*; here the chief caravan route to *Darfur* goes off to the south-west from the great bend of the Nile. The town of *Barber* on the right bank, not far below the confluence of the Atbara, is a collection of mud huts surrounded by tall acacia and palms, and is the starting-point of a frequented caravan route which leads by a fortnight's march across the Nubian desert to the Red Sea port of *Suakin*.

9. Farther south, approaching the Egyptian Sudan, we come to the province of *Khartum* (extending on both sides of the Nile), with which those of *Sennar* and *Fazaki* on the basin of the Blue Nile, and of *Bahr-el-Abiad* (including both banks of the main river as far south as the confluence of the Sobat), are associated in government. *Khartum*, close to the confluence of the Blue and White Niles, is the largest town of all the southern Egyptian dominion, and the great centre of traffic, as it is the converging point of many river and caravan routes. It is also the residence of the Governor-General of the Egyptian Sudan, and has a motley population of Turks, Greeks, Jews, Egyptians, Nubians, Abyssinians, and Negroes. A regiment of the warlike Shilluks of the upper Nile is maintained here to enforce the payment of tribute among the Arab tribes of the provinces. The town of *Sennar* on the Blue Nile, which has given its name to the surrounding province, was formerly a great and populous place. Its vicinity is called the "granary of the Sudan," and sends down great supplies of durra to *Khartum*. *Famaka*, the chief place in the province of *Fazaki*, is at the limit of the Egyptian territory on the Blue Nile, near the border of Abyssinia. Egyptian power in the province of *Bahr-el-Abiad* centres at the military town of *Fashoda*, where a garrison of 800 men is maintained as a post of observation against attack from the warlike Shilluks. On the Sobat the military station of *Nasser*, 190 miles up the river, serves a like purpose in the country of the Nuehr tribes.

10. *Kordofan*, on the west of the province of *Bahr-el-Abiad*, has been under the rule of Egypt since the expedition made by *Mehemet Ali* in 1821. This country presents generally the aspect of wide undulating plains covered with high brown grass, with here and there groups of mimosas and solitary baobabs. Water is so scarce at most seasons that it has to be stored carefully in reservoirs, and the herds must be kept in the neighbourhood of the wells. The town of *El Obeidh*, its capital, built of circular houses of roughly kneaded mud-bricks, is in the centre of a vast plain. Beyond *Kordofan* west-

ward we approach *Dar Fur*, an extensive country spreading out round the central nucleus of the Marrah mountains; this region was conquered for Egypt in 1875, its former Arab Sultan being slain in the campaign. From the central mountains numerous channels of periodically filled streams radiate outward, but the country is generally unfruitful and dry. In the rainy season, which lasts from June till September, however, it becomes clothed with the richest pasture. Its inhabitants, who chiefly congregate in the more favoured central mountain region, are African negroes, and Arabs who form the dominant race, and who are the actual holders of the land. All are Mohammedans. *Fasher*, the capital town on the lake of Tendelti, lies on the north-east slope of the Marrah mountains. In 1876 the Egyptian garrisons of *Dar Fur* numbered about 10,000 men.

11. Passing up the Nile valley from the confluence of the Sobat, we reach the Egyptian military station of *Shambi* (7° N.), and then that of *Bohr*. Near latitude 5° N. on the left bank of the river is the military station of *Lado*, now the chief seat of the Egyptian Government of the Upper Nile region, having taken the place of *Gondokoro*, higher up on the river, formerly the most important station in this region, but abandoned from its unhealthiness. Higher still the Egyptians have stations at *Rigaf*, *Dufth*, and *Fatiko*, near the Albert Nyanza, and at *Foweira* in the country of Unyoro, between the Albert and the Victoria Lakes. All the country westward of the Upper Nile, draining to it by the great group of rivers which unite in the Bahr-el-Ghazal, is dotted over with the "seribas," or collecting depots of Egyptian ivory traders, who buy in the tusks collected by the native Negroes.

12. The general government of the eastern Egyptian Sudan, and of the Red Sea coast, was formed in 1871, and subsequently extended. It embraces the province of *Taka*, which extends from the Atbara river eastward to the northern corner of the Abyssinian highland; that of *Suakin*, on each side of its central port along the Red Sea coast, and of *Massowah*, which reaches farther south along the maritime region past the north-eastern base of the mountains of Abyssinia. The mud-walled town of *Kasala*, on the Khor-el-Gash, a periodically flowing tributary of the Atbara, is the chief place in the province of *Taka*, and is joined to the port of *Suakin* by an important caravan route. The port of *Massowah*, from which its province is named, stands opposite the Dahlak group of islands, famous for their pearl-fisheries. At various times it had been made the starting-point of Turkish expeditions against Abyssinia, and was finally handed over to Egypt in 1866. It is naturally the main outlet of Abyssinia to the sea, and twice a year caravans reach it, and return to that country. Its trade is in the hands of Banyans, or Indian merchants.

Gradually the Egyptians have been closing round the great table-land of Abyssinia, isolating it more and more completely from the outer world. Since 1872 the frontier countries of Bogos, Mensa, Takue, and Marea, at the northern apex of the table-land, have been taken possession of. The Egyptians have also been extending their dominion along the coasts of the Red Sea south of Massowah. They now claim all the low-lying Afar, or Danakil country, between the Abyssinian highlands and the Red Sea, and in 1873 the town of *Berberah*, on the south coast of the Gulf of Aden, was occupied by the troops of the Khediv. This is by far the most important market and outlet of the Somali country, and holds a great annual fair, visited by upwards of 20,000 people from all parts of the surrounding countries, and from India. In 1875 the harbour of *Zeila*, at the entrance to the Bay of Tajurrah, the farthest inlet of the Gulf of Aden, was made over to the Egyptian Government by the Porte, and later in the same year the troops of the Khediv marched inland thence, and occupied *Harar*, which previously formed a little kingdom by itself under an Amir. *Harar* is essentially a commercial town,

exporting slaves who have been gathered to this point from the surrounding hill countries of southern Abyssinia, besides ivory, coffee, tobacco, woven cloths and mules, by caravans which leave every year for the great fair at Berberah. On *Assab Bay*, on the Danakil coast of the Red Sea, and on territory claimed by Egypt, the Italians have recently established a factory.

ABYSSINIA.¹

1. Between the Egyptian Sudan and the hot lowland called the Afar, or Danakil country, skirting the southern part of the Red Sea, and between 10° and 16° N. latitude, rises the lofty, wedge-shaped highland of Abyssinia, a land differing as much in its physical configuration as in its inhabitants from all the parts of Africa in the same zone. Confined by the encroaching power of Egypt in west, east, and north, almost exclusively to the highland region, the area of Abyssinian territory amounts now to only about three times that of England.

2. **Physical Features.**—As the Abyssinian highland forms only a more marked promontory of the great table-land which skirts the eastern side of the continent, it has no definite physical limit in the south, and on the north its heights pass into those which skirt the Red Sea margin away to the borders of the Nile delta. Towards the north-west it descends by a well-marked, but more gradual, slope to the grassy plains of Senaar. Towards the east its edge rises steeply from the low levels to an average height of 7000 or 8000 feet. All the Abyssinian tributaries of the Nile flow westward, and no river breaks through the eastern wall. The highest summits of the plateau occur irregularly over it. The chief Alpine knot is that of the mountain of *Semyen*, round which the Takazze river, or Upper Atbara, flows in a deep ravine; and here the peak of *Ras Dashan* rises to 15,160 feet above the sea, and is always snow-capped above a height of 13,000 feet. Towards the western side of the plateau lies the beautiful lake *Tzana*, or *Dembea*, 40 miles long, the reservoir of the Blue Nile. Its surface is at an elevation of 6100 feet above the sea, and from its south-eastern corner the river, escaping by a narrow opening, curves round to south and west, ultimately to turn north-west through Senaar to the White Nile.

3. **Climate.**—Three regions of different level, climate, and character of landscape, one above another, are distinguished in the Abyssinian highland:—

- (1.) The *Kollas*, or lower skirt of the plateau, between elevations of 3000 to 5000 feet, with a warm climate, characterised by luxuriant vegetation of gum-yielding acacias, cotton, indigo, the ebony tree, baobabs, tamarind, sugar-cane, coffee, and bananas, and abounding in the larger wild animals of Africa.
- (2.) The *Waina-Degas*, between heights of 5000 and 9000 feet, with a climate like that of Italy or Spain, in which corn and fruits thrive, everywhere capable of cultivation.

¹ Arabic, *Habesh*, signifying mixture or confusion, referring to the diversity of its inhabitants in race, or to their frequent turmoils. To the peoples of the surrounding lowlands the highland is known as *El-Mokaddah*. Area 158,000 square miles. Population about 3,000,000.

- (3.) The *Degas*, the highest belt, between 9000 and 14,000 feet, with cool climate, falling to below the freezing point at the higher elevations, affording pasture to herds of oxen, goats, and long-woolled sheep, but with little forest growth, and generally meagre vegetation.

In the lower belts the rainy season lasts from April till September; on the higher plateau the rains begin in July and continue till October; and farther south a second rainy period appears in the beginning of the year.

4. *People*.—The low-lying skirts of the plateau are but thinly inhabited, but the rest of the country seems to be well peopled, though we have no accurate knowledge of the number of its inhabitants. Several distinct peoples are found on the plateau. The *Abyssinians* proper show their Semitic origin and their relationship to the Arabs in their brown colour, becoming almost white in the north; in their curved noses, animated oval eyes and symmetrical figure. They are generally brave, active, and adroit.

Falashas, who retain many Jewish characteristics, are frequent in the northern uplands; dark *Gallas* in the south. The *Wito* fishers, hunters of hippopotami round the Dembea lake, are a remarkable people, distinct in type of feature, and despised by the Abyssinians.

By far the larger number of people profess a debased form of Christianity, the abuna of the Abyssinian church being consecrated at Alexandria by the superior coptic patriarch: the whole country also swarms with priests and monks. The Mohammedans and Jews stand higher here than the Christians in point of morality and character; the former are the traders of the country, the latter, unlike their brethren in Europe, are for the most part agriculturists. As warfare and brigandage are rife in the plateau almost constantly, cultivation has made but little progress; the herds remain the chief wealth of the land.

5. *Government and Divisions*.—From time immemorial a king or *negus* who associates himself with the religious traditions of the country by claiming descent from Solomon, and bearing the title "king of kings" as absolute ruler over the lives and property of his subjects, has nominally ruled Abyssinia, but the history of the country, as we have seen, presents a continued series of internal and external wars—now a crusade against the Mohammedans of the plains, now an invasion from that quarter, or a rebellion of one or other of the native princes, who claims the sovereignty of the country. The three great divisions of the country are those of *Tigre* in the north, of *Amhara* central, and of *Shoa* in the south, including within themselves many provinces, principalities, and clans. Shoa has once more been compelled to acknowledge the supremacy of the *Negus*, and to pay tribute.

6. *Chief Towns*.—The ancient capital of Ethiopia is *Gondar*, on the slope of the mountains which descend to the fertile plain of Dembea, round the north of the lake. It is divided into a Christian and a Mohammedan quarter, and has for its most interesting feature the ruin of a magnificent towered castle or palace, built for the kings of Ethiopia by Indian architects under the direction of the early Portuguese settlers. As the ruler is generally carrying on a war with one or other rebellious prince or chief in some part of his dominions, his residence is most frequently at one or other of the many military camps throughout the country. *Adowa*, which lies on the plateau north of the Takazze at a height of 6270 feet above the sea, is the present capital of the northern division of Tigre, and is a great market-town: *Axum*, a few miles west of it, was the former capital, and possesses many interesting monuments and ruins, besides that of a cathedral built by the Portuguese.

Ankober is the capital of Shoa, the southern division; but for a great part of the year the king of this country resides at the military camp of *Angolala*, west of Ankober, or at *Lichi*.

The mountain fortress of *Magdala*, stormed by the British in 1868, rises near the south-eastern corner of the central division of the country in 11° south latitude.

7. *Trade*.—The small external trade of Abyssinia finds its way to the sea chiefly by the caravans, which go annually to the port of Massowah on the Red Sea, now in the hands of the Egyptians. A considerable traffic is carried on between the lowlands of the Afar country; salt from the lake beds there, formed into little uniform blocks, is carried up the steep eastern edge of the plateau to the great salt-markets of *Adigerat* and *Sokota*, and these blocks pass as a money currency all over the country. The chief outlet route on the north-west, towards Sennaar, is that which passes down from Gondar to the district of Galabat, between the Blue Nile and the Atbara, which has recently been annexed to Egyptian territory. Its capital, *Melemmeh*, is in all respects an Abyssinian town, and is the great market for the wax, coffee, cotton, gums, and hides of western Abyssinia.

SUDAN.

1. The name *Sudan*, or the “land of the blacks,” was early applied by the Arab geographers¹ to designate generally the countries of negro-land beyond the southern borders of the great Sahara. It is now understood to embrace all the vast regions of northern central Africa south of the 15th or 16th parallel of latitude, reaching from the Atlantic coasts eastward to the Nile valley, and south to about the 5th parallel. As yet only its margins along the Atlantic in Upper Guinea are well known to Europeans. Great spaces of the interior country are as yet unexplored, and for the rest our information is confined to the lines through it which have been traced by several adventurous travellers.

2. *Physical Features*.—The great natural features of the Sudan with which we are acquainted are the mountains of *Futa Jallon* in the west, from which the *Senegal* and the *Gambia* rivers descend to the Atlantic, and on the inner side of which the *Joliba* or *Niger* takes its rise; the *Kong Mountains*, forming the edge of the plateau within the line of the coast of Upper Guinea; the valley of the *Niger*, enclosing the groups of the *Hombori* mountains within its northern bend; its tributary the *Binue*, from the east; the volcanic *Cameroons* peaks at the head of the Gulf of Guinea, and Mounts *Alantika* and *Mendif* farther inland. Then the remarkable basin of *Lake Chad*, receiving the *Shari* river from the south, and the group of the *Marrak Mountains* in Darfur, descending eastward to the broad valley of the Nile.

3. *Climate and Landscape*.—The whole of this great belt is characterised by tropical heat, but this is accompanied by an abundant supply of moisture, and the vegetation thus called up over it tends to reduce the daily variations of temperature. The tropical rains have nearly the same period over the whole of its extent, beginning in June or July, when the sun in its apparent movement northward has heated the land and drawn in the sea-winds laden with moisture to water it, and to fill out the rivers and lakes; and the rains cease soon after the sun has passed on its way south again in September or October. But their amount and duration decrease in regular

¹ Ibn-Haukal uses this term in 948.

gradation from the coasts of the Gulf of Guinea inland, becoming less and less, till, at about the 15th parallel, they occur only in scanty showers, and the aspect of the land gradually merges into that of the bare desert.

In place of waterless desert with dried-up river beds and scanty vegetation, and wide uninhabitable wastes, the Sudan presents a picture of diversified, well-peopled, fertile, and cultivated lands, and varied plant and animal life, with many populous and settled nations and countries, and European colonies, some of which have reached a certain degree of civilisation and progress in the arts.

We may now look more particularly at the divisions and countries of the Sudan, beginning with the maritime portions, with which we are best acquainted.

SENEGAMBIA.

4. Senegambia is the rather clumsy name given by geographers to the maritime region of the western Sudan, watered by the Senegal and Gambia rivers; and generally understood to embrace the country from the former river southward to the promontory of Sierra Leone.

Three European powers—France, Portugal, and Britain—have settlements here :—

(1.) The largest are the possessions of France, which extend all along the left bank of the lower Senegal river, and along the coast past Cape Verde to near the Gambia. The seat of Government of French West Africa is at *St. Louis*, on the mouth of the Senegal, but the chief commercial town is that of *Dakar*, on the peninsula of Cape Verde, guarded by the islet fortress of *Gorée*. Farther south the French have several smaller isolated possessions; on the banks of the *Cazamance River*, with *Carabane* for the chief station there; on the *Rio Nunez*; on the *Rio Pongo*, and on the *Melacoree River*, north of Sierra Leone.

(2.) The Portuguese nominally claim a large extent of coast-land between the *Rio San Pedro* (13° 7' N.) and Cape Verga north of the Rio Pongo, but the territories actually in their possession are very small, and are chiefly the factories of *Bissao*, at the mouth of the river Geba; those of *Cacheo* and *Farim*, on the San Domingo river, the next northward; and the port of *Zinguichor*, on the Cazamance, adjoining the French settlements. They also hold the islets of *Bulama* and *Gallinhas*, the inmost of those in the Bissagos Archipelago. The farthest French port inland is, at *Kita*, within a hundred miles of the Upper Niger, to which it is proposed to construct a railway.

(3.) The greater part of the Gambia river, which is navigable for 300 miles up from the sea, is in the hands of the British, who have the important little colony of *Bathurst*, at the mouth of the river, and several stations higher up. *Sierra Leone*, the "lion hill," three days' voyage south of the Gambia, forms part of the same colony. The peninsula rises up to hills of 2500 feet in elevation, covered with rich tropical vegetation, and the capital of the colony, named *Freetown*, is on its slope. First founded in 1787 as a civilising settlement by English philanthropists, Sierra Leone became a refuge for slaves captured by our vessels along the coast, and the descendants of these freed negroes form the bulk of its population. *Sherboro* island, 50 miles south of Sierra Leone, also forms part of the British colony.

5. The inhabitants of all this region of Senegambia, excepting the Europeans of Sierra Leone peninsula and the few traders who live in the towns and "factories," as the trading stations are called, are native negro tribes, chiefly those named the *Mandingoes* and *Joloffs*, all black and well-

formed people. Here also are found representatives of the remarkable people called variously the *Fulbe* or *Fellatah*, a much more advanced family, differing from the true negro in their red-brown colour, their finer features, slim figures, and less woolly hair, whom we shall afterwards meet with farther inland. They are the zealous propagators of Mohammedanism in the Soudan.

6. The trade of the Senegal is chiefly in the gums yielded by the acacia forests which cover the country north of the river; farther south the foreign factories are the depôts of palm-oil, from which the greater part of our soap is made at home, and of ground nuts, hides, and wax, which the interior lands give abundantly, and which are sent down the rivers to the coast. Ginger, pepper, arrowroot, coffee, rice, and many other valuable tropical products, are also capable of cultivation here; and cotton can be sent home in large quantities from Senegambia whenever its price is high elsewhere.

LIBERIA.

7. Going south along the coast we come to the negro Republic of Liberia, the history of which we have sketched in a former chapter. It reaches for nearly 400 miles along the Grain Coast (named from the grains of the Meleguetta pepper, which it yields abundantly), and inland to the mountain edge of the plateau.

Here the climate is dangerous to Europeans, though not unfavourable to the indigenous negro population. Of all the many plants which cover it with luxuriant vegetation, the oil-palm is the most valuable, and its bunches of red and yellow fruit often have a thousand oil-yielding plums in each, the bunch weighing in some cases half a hundredweight; dye woods, ebony, the copal, and other gum trees, besides coffee, sugar, and cacao, also flourish here, and iron and copper are not wanting. The woods abound in apes and lizards, though the larger wild animals are now rarely met with. The civilised negroes of the Republic number about 18,000; the uncivilised about 700,000. The aboriginal people of that part of Liberia which lies on each side of Cape Palmas are the robust *Kroos*, who have been introduced as labourers in all parts of the West African coast, and who are employed as sailors on every vessel trading along these coasts, where labour in the tropical sun is too severe for a white crew.

Monrovia, the capital and seat of government of the legislative assembly of the Republic, is situated on the rising ground of the coast, within the shelter of Cape Mesurado, which forms a breakwater against the incessant roll of the high surf from the Atlantic. It resembles a small town of the southern States of North America. Its trade is carried on chiefly with England, Holland, Hamburg, and the United States.

GOLD COAST.

8. Passing by the *Ivory Coast*, affording ivory no longer, where the French formerly held the forts of Assinie and Grand Bassam, we come to the *Gold Coast* of Guinea, which is now entirely in the hands of the British, and forms a colony of the Crown.

It consists of an outer margin of plain, on the coast of which a roaring surf continually breaks, reaching east and west for about 300 miles, bounded landward by hills covered with primeval forest. It is rich in the oil-palm and oil-

yielding ground nut, but the climate is exceedingly dangerous to Europeans. All attempts to introduce cattle and horses have failed, owing to the presence of the poisonous *tsetse fly*. The natives here are of various negro tribes, among whom the *Fantis* are prominent.

The chief British station is that of *Cape Coast Castle*, named from its great church-like fort on the water's edge beside the filthy native town, above which the European residences peep out from among the woods. *Elmina*, "the mine," about midway in the length of the coast, was the earliest European settlement here, and is still one of the largest towns. It was founded by the Portuguese before the discovery of America in 1481, was taken from them by the Dutch, and ultimately passed with the other possessions of Holland on this coast, by purchase, to Britain in 1873.

9. Behind the Gold Coast lies the country of the warlike negro people called the Ashantees, the greater part of whose country consists of forest jungle. Their absolute king used to reside at *Coomassie*, which was a large city before it was destroyed by the British in the expedition of 1872.

The river *Volta*, the most important after the Niger on this part of the African coast-land, forms the western limit of the Ashantee country, but both of its banks near its mouth are embraced in the colony of the Gold Coast. It appears to be navigable for 200 miles upward, and will doubtless become an important highway of trade.

10. West of the *Volta* we come to the negro kingdom of *Dahomey*, notorious for its sanguinary rites and barbaric customs. Its great outlet on the coast is the port of *Whydah*, 70 miles north of which lies the capital town of *Abomey*, a walled town, the residence of the despot, guarded by his Amazons.

A little farther on is the town of *Lagos*, belonging to Britain; it is the most considerable seaport of all this part of West Africa, in regular communication with Liverpool by steamers, which carry home cargoes of palm-oil and cotton, of which there is an unfailing supply.

11. Next we reach the dead levels of the Niger delta, the twenty-two chief channels of which are separated by mangrove-covered swamps. The navigation of the Niger, the establishment of which cost many lives from fevers, and attacks by the natives on its banks, is now regularly carried on by six or seven steamers of light draught, which ascend from the Atlantic to the factories at the confluence of the Binue, and even higher up the main river, exchanging European goods for ivory, palm-oil, and "shea" butter, derived from the olive-like seeds of a tree of the genus *Bassia*. These vessels, however, require to be well armed. The town of *Abo*, at the head of the Delta, is in the very centre of the oil region; *Onitsha* and *Iddah* are important native towns higher up the river, and opposite that of *Igbegbe*, at the mouth of the Binue, stands *Lukoja*, which was for seven years the place of residence of a British consul (1857 onward), and which since 1865 has been an important mission station, under the management of the negro Bishop Crowther. *Lukoja* is also the great depot and trading store of the Liverpool merchants who traffic on the river. The large Mohammedan town of *Egga*, a day's steaming higher up than *Lukoja*, in the Hausa kingdom of Gando, is the present limit of the European trade on the Niger. Beyond the Niger delta are the estuaries of the *Old Calabar* and *Cameroons* rivers. These have been called the "oil rivers" of West Africa, from the enormous supply brought down them to the coast. Here the European traders live in hulks anchored in the river, which serve as shops, where all kinds of European goods are bartered for the oil, which is melted down and stored ready for shipment in sheds on the shore.

INLAND COUNTRIES OF THE SUDAN.¹

12. The most westerly of the interior countries of the Sudan is the well-peopled hilly land in which the Senegal and Gambia, and many other of the rivers which flow down through Senegambia, take their rise. This is named *Futa-Jallon*; it has *Timbo* for its chief town and is the centre of Mohammedanism in this region. Inland from Liberia and Sierra Leone lie the almost unknown countries of the *Mandingo* negroes.

The kingdom of *Bambarra*, first made known by the traveller Mungo Park, appears to stretch across the Upper Niger over a wide area; its capital, named *Sego*, is a great square town surrounded by walls, with two-storeyed flat-roofed houses, situated on the bank of the river. A little lower down is the great trading town of *Sansandig*, whither European goods are brought by caravans all the way across the great desert from Morocco.

Across all the central basin of the Niger, and far eastward beyond its tributary the Binue, into the unknown region of Central Africa, extend the states which have been formed by the Hausa peoples, a branch of the Fulahs, the most intelligent of all the races of the Sudan and the most zealous propagators of Mohammedanism. The most westerly of these great Hausa states is that of *Massina*, extending across the Niger below the kingdom of *Bambarra*, including the great towns of *Hamda Allahi*, its capital, *Foucaru*, and the better known city of *Timbuktu*, the great emporium of traffic across the desert, all near the great river.

Beyond *Massina* the Hausa state of *Gando* reaches along the river to the confluence of the Binue, with many large trading towns on the Niger, such as *Rabba* and *Egga*, some of which are now visited by European trading steamers; and the capital city of *Gando* on a western tributary. East of *Gando* stretches the kindred state of *Sokoto*, with its capital of the same name, reaching over an extent about equal to that of the British Isles. To this state belongs the province of *Adamawa* or *Fumbina*, which lies beyond the Upper Binue. Another subjugated province of *Sokoto* in the south takes its name from the great city of *Yakoba*, north of the Binue, which the traveller Rohlfs describes as having walls three and a half hours' walk in circuit, including great gardens.

In the basin surrounding Lake Chad lie the kingdoms of *Bornu* and *Baghirmi*. The former is described as a lovely and fruitful land, presenting a remarkable example of negro civilisation, possessing a well-organised administration, a court and government, with all its dignities and offices. Its dominant race of inhabitants are the Kanuri, and Mohammedanism has long been adopted. The whole policy of the state is, however, based on slavery, and the traffic in human beings flourishes vigorously. *Kuka*, the capital of *Bornu*, on the western shores of the Chad, is one of the greatest markets of all Central Africa, second only to that of *Kano* in *Sokoto*, and morning and evening its streets are so crowded with cattle, camels, sheep, and poultry, as scarcely to leave room for the bustling population. Immediately outside the gates a great

	English sq. miles.	Population.
1 <i>Massina</i>	64,400	4,500,000
<i>Gando</i>	78,500	5,500,000
<i>Sokoto</i> with <i>Adamawa</i>	178,200	12,570,000
<i>Bornu</i> with <i>Kanem</i>	79,200	5,100,000
<i>Baghirmi</i>	70,800	1,500,000
<i>Wadai</i>	171,000	2,600,000
	642,100	81,770,000

horse auction is held, for the horses of Bornu are famed throughout all the Sudan.

At the time of the visit of Dr. Nachtigal to these regions in 1872 the kingdom of Baghirmi had been invaded, and its capital town of Masena had been captured by the Sultan of the neighbouring state of *Wadai*, so that at present it appears to be tributary to that kingdom. The warlike people of *Wadai* seem to be far behind those of Bornu in arts and industries; the present Sultan rules at his capital of *Abeshir* with relentless severity, and death is the punishment inflicted for almost all crimes.

The farthest eastern states of the Sudan, *Dar Fur* and *Kordofan*, have fallen, as we have seen, before the advancing power of Egypt, and have now been incorporated as parts of that dominion.

LOWER GUINEA.

1. By Lower Guinea is generally understood the maritime coast-land of West Africa, extending for about 1500 miles in a north to south direction, from the head of the Bight of Biafra to Cape Frio.

At the northern part of this coast, out from the high peaks of the Cameroons, which stand on a peninsula of the mainland, are four volcanic islands in line. The largest of these, *Fernando Po*, belonging to Spain, rising to a height of 10,190 feet in its perfectly conical summit, is wooded all over, so that its harbour of *Clarence Cove* is one of the most picturesque points in West Africa. It used to be a place of banishment for political offenders from Spain, but it is mainly inhabited by the tribe of the Aniyo, or "Boobies," as they are called by sailors. *Prince's Island*, also compared to a volcanic garden, and *St. Thomas* beyond it, with its lofty peak rising to 7005 feet above the sea, belong to Portugal; but the rugged little island of *Annobon*, the last of the chain, is a Spanish possession.

2. Near the equator, on the coast of Lower Guinea, the Spaniards have small possessions in the beautiful *Corisco Bay* and on the adjoining promontory of *San Juan*; the French hold the inlet of the Gaboon, and claim the delta lands and mouths of the Ogowe river, where they have several trading stations. The chief negro tribe of this part of Western Africa is that named the *Fans*, a fine race, skilled in the art of forging their weapons and poisoned arrows, who are avowedly cannibals, though this practice has fallen into abeyance where they have come in contact with European influence.

3. Beyond the low mangrove-covered coasts above the Ogowe delta, we reach a hilly thickly-wooded shore, in which oil-palms, gum-trees, copper, ivory, coffee, and cotton, besides mandioca and bananas, are in great abundance. This well-peopled maritime region is divided into the native states of *Loango*, *Angoy*, and *Kakongo*, the first-named being the most powerful.

4. These states are bounded on the south by the great barrier of the wide and rapid river the Congo or Zaire, which forms a great line of division across West Africa, and the coastlands south of its line contrast strongly with those which lie north of it. In place of the lagoons and mangrove-covered swamps, backed by dense evergreen humid forest, which we have left to the northward, level sandy bays appear along the shores south of the great river, and the forest vegetation retreats away from the coast, so that only long stretches of coarse grass, with here and there a tall cactus-like euphorbia, or a gigantic solitary baobab, are seen from the ocean.

Behind the coast plain, however, the land rises in terraces, each of which upwards is accompanied by a marked change of vegetation, from larger shady trees and broad-leaved grasses on the first, to the second in which creepers monopolise the vegetation, clasping round the biggest trees with a mass of foliage and flower, up to the third, where great plains are covered with gigantic grasses. Each of these succeeding changes of level also corresponds to a change of climate, from the hot dry coast-land up to the cooler and moister air of the interior. The foreign factories at the mouth of the Congo are gathered on a strip of sandy coast called *Banana*, on the northern side of the estuary; about 45 miles up the factories of *Punta da Lenha* stand alongside the deep bank; *Bomma* or *Embomma*, 60 miles up, is the highest foreign station, and was formerly a great slave mart.

5. Long ago all the country for a great distance south of the river was subject to the king of Congo, from whose dominion the river is named; his capital of *Ambassi* became the centre from which the early Jesuit missionaries spread cultivation and industry far and wide. Here they built the cathedral and monasteries of San Salvador, the ruins of which still exist, and by their influence gained great power and extent of territory for the king of Congo. On their expulsion, however, the kingdom gradually dwindled down, till its territory now includes little more than the neighbourhood of the capital, though its king still controls several of the chief trade routes to the interior, and levies toll on the passing ivory caravans.

PORTUGUESE WEST AFRICA.

6. The Portuguese claim in right of priority of discovery all the maritime country between lat. $5^{\circ} 12' S.$ (north of the mouth of the Congo) and Cape Frio, in $18^{\circ} 30' S.$, but their actual occupation does not extend north of $8^{\circ} S.$

Portuguese West Africa is termed the *Province of Angola*, and is divided from north to south into the four provinces of *Ambriz*, *Loanda* or *Angola* proper, *Benguela*, and *Mossamedes*, each corresponding to its chief town of the same name.

These are again subdivided into districts under military governors, the whole being under command of a governor-general, who resides at *Loanda*. The government is, however, utterly corrupt, and reduces itself to a system of taxing and plundering the native population by ill-paid officials, so that the development of the resources of this splendid country have hitherto been checked. There is not yet one good road in all the country.

7. *People*.—The natives of the northern parts of the country, speaking the language called *Bunda*, retain some part of the education which they received from the zealous missionaries of former times. Many of them can read and write fairly in Portuguese, but south of the *Coanza* river a number of distinct languages and tribes, some warlike and savage, others undersized and miserable creatures, live in a barbarous condition as nomadic hunters and cattle-owners, armed with “*assegais*” or spears, and knob-sticks. The elephant is not now met with in any part of the maritime region, but the country abounds in antelopes, zebras, and wild buffaloes, and hyenas, jackals, and leopards infest some districts. The large dog-faced monkey is also very abundant.

8. *Products*.—Since the cessation of the slave trade, which was the great traffic of this coast in former times, the exports of ivory brought down by the slave gangs from the interior has also decreased, but the ground nut is now largely cultivated for its oil product; coffee grows wild; cotton is cultivated

in patches all over the land ; gum copal is abundant ; and palm oil is brought down the Coanza river in considerable quantity. Iron has been smelted from time immemorial in the district of *Cazengo*, a little north of the Coanza, and copper appears in small quantity in many parts.

9. **Chief Towns.**—*St. Paul de Loanda*, the capital of the colony, on a fine bay, is mainly a European town, with large houses roofed with tiles, and with open verandahs to admit the cool sea breeze. *Benguela*, formerly one of the great slave ports whence thousands were sent to Brazil and Cuba, is also a large place on the coast ; *Mossamedes*, farthest south, is a pretty town of stone houses, commanded by a fort ; but *Ambriz*, the northern port, is a ruinous and neglected place.

The inland frontier of the Portuguese territory is altogether indefinite, but the farthest of their settlements in the interior is that of *Cassange*, on the main route to the great interior kingdom of Ulunda, and it lies about 350 miles east of Loanda.

EASTERN AFRICA.

SOMALI AND GALLAS.

1. Two great branches of the African peoples occupy a large portion of eastern Africa, south and eastward of Abyssinia. These are the Somali and the Gallas, peoples as closely related to one another in their Hamitic origin as they are inimically disposed towards each other. Both are very distinct from the negroes.

2. The *Somali* country may be described as the great eastern promontory of Africa, which terminates at Cape Guardafui, its inner boundary being marked by a line drawn from the head of the Gulf of Tajurrah southward by the eastern side of Harar to meet the Juba river, which forms the natural boundary of the Somali and Galla countries in the south.

3. As yet the Somali country has only been seen by Europeans in a few short excursions from its northern coast. The greater part of it in that direction appears to form a table-land, which falls by steep edges to the Gulf of Aden, now approaching the coast in rugged cliffs, now retreating and leaving a wider maritime plain. Inland, the plateau appears to reach away south in vast grassy prairies, where gazelles, zebras, and antelopes roam about in vast herds, and where the ostrich, giraffe, and elephant are also abundant. The central country of Somali land, named *Ogaden*, is famed all over the coast as a grazing land, in which there are great herds of camels, ponies, cows, and fat-tailed sheep. Gums and myrrh especially, with frankincense and aloes, appear to be very abundant over all this region.

4. The Somali of the present day are not so purely a Hamitic people as the Gallas, for the Arab migrations into their land, which began about the fifteenth century, and continued during several centuries later, have left a strong impress. Their language is thus a mixture of the Arabic and Galla tongues, the latter predominating, and the Somali have become fanatical Mohammedans. Tall, slight, and agile, and slightly darker than Arabs, their lips and noses are almost Grecian, but their hair is woolly like a negro's. Their tribes are very numerous.

5. The immense country of the *Gallas* reaches from the south of Abyssinia (latitude 10° N.) to 3° or 4° south of the equator in the maritime region of East Africa, or for a distance of 900 miles from north to south. On the east it is

conterminous with Somali land, and westward it appears to reach well into the great basin of the Upper Nile, though the limit of the Gallas in this direction is still quite unknown. Their country remains also unexplored, but appears to form for the most part a southward continuation of the great plateau land of Abyssinia, and of the prairie-like country which reaches along the maritime base of the highlands.

6. The Gallas are a fine tall and well-formed race, with lively eyes and deep brown complexion, but appear to differ very considerably in their characteristics in different parts of the great region they occupy. Those who live in the southern borders of Abyssinia are brave warriors and intelligent traders. Some are Mohammedans, some profess the Christianity of Abyssinia, but all the southern Gallas are heathen.

7. South-west of the Gallas the wide plateau country which stretches between the snowy mountains of Kenia and Kilima-njaro and the eastern borders of the Victoria Nyanza is occupied by kindred Hamitic tribes called *Wa-Kwavi* and *Wa-Masai*. These are warlike nomads, who are known and feared along the maritime region as the plunderers of the Arab caravans, which make their way inland towards the lake region from the east coast strongly armed. The more settled peoples of the countries near the coast are obliged to be continually on the alert to guard their cattle against the frequent raids of these marauders.

SULTANATE OF ZANZIBAR.

8. The long intercourse and residence of Arab colonists all along the eastern coast from the Juba river, southward for nearly a thousand miles to Cape Delgado, has given rise to a mixed race of people inhabiting this maritime belt, called the *Swahili*, who speak a language which has a strong intermixture of Arabic. They have also become zealous Mohammedans, and as they are the great traders of eastern Africa, their language has spread far and wide in the interior, so that there is now no other which is understood over so large an area of the continent. The Swahili coast also corresponds for the most part to the dominion of Zanzibar, the history of which we have previously sketched.

9. The island of Zanzibar, which forms a central point of the Sultanate, 6° south of the equator, is about fifty-five miles long, and is separated from the mainland by a channel thirty miles in width.

The land rises in the interior to about 400 feet, and is very fertile throughout, its country houses, the seats of the dominant Arabs, appearing between groves of coco-palms and mangos, the fields being covered with crops of rice and sugar-cane, or manioc and millet. The people here, numbering from 300,000 to 400,000, are the Arab owners of the soil, many half caste, Comoro islanders, and natives of India (chiefly Banyans or Indian merchants) and Lascar seamen, with African slaves. The climate is exceedingly hot, averaging from 70° to 90°. In December, January, and February, the north-east monsoon brings dry weather: during the rest of the year the winds are from south-east chiefly, and March, April and May are the months of the heaviest rains. The white houses of *Zanzibar* town, on the western side of the island, facing the continent, have a fine appearance from the sea, but the town has narrow and dirty streets. It is the staple place of trade on the east African

coast, and carries on a busy commerce in ivory, cloves, pepper, hides, and cotton goods; till recently it was also a great slave mart. When the north-east monsoon blows across from India and Arabia its population is largely increased by the arrival of traders.

10. On the mainland of Africa the dominion of the Sultan of Zanzibar does not extend to any considerable distance into the interior, and even on the coast belt, towards the Somali and Galla lands in the north, his power is practically confined to the neighbourhood of the places which are garrisoned by Arab troops.

The most northerly settlement which acknowledges his rule is that of the coral islet of *Warsheikh* on the Somali coast. A little farther south the grain port of *Makdeshu* or *Magadoza* belongs to him, as do the neighbouring coast towns of *Merka* and *Brava*, all north of the mouth of the Juba. The historical Arab settlement of *Melinde*, a little north of the estuary of the Sabaki river, which flows down from Mount Kenia, where Vasco de Gama landed in 1498 after doubling the Cape of Good Hope, and where he obtained the pilot who steered his ship across to India, is still a considerable place, though ruinous. A great grain market held here in autumn draws together a large concourse.

Mombasa, on a coast islet a little farther south, is the most important town on the Swáheli coast, and the starting-point of several important trade routes to the interior. Here are the ruins of the Portuguese town and of the ancient fort they built, besides a considerable native town which traffics in ivory and gum, copal, corn, hides, and slaves. Opposite is the important mission station of *Frere Town*, and a little way inland that of *Ribe*.

The town of *Pangani*, at the mouth of the Rufu river, coming down from Mount Kilima-njaro, is also a considerable trading-place and starting-point of caravans for the interior. *Saadani*, and especially *Bagamoyo*, opposite the island of Zanzibar, have become historically noted as the points from which the earliest explorers of the lake region of East Africa set out on their inland travels. At *Dar-es-Salaam*, farther south, the Sultan of Zanzibar has extensive coco-nut and maize plantations, worked by about 300 slaves, and here the oil-palm has been successfully introduced. Gum-copal is also abundant in this neighbourhood, and india-rubber yielded by a species of vine has recently become an important article of trade.

Beyond Dar-es-Salaam we reach the delta of the *Lufiji* river, the course of which is as yet almost unknown. The two *Kilwas* (Kivinja and Kisiwani), the termini of main routes to the Nyassa, are the most important coast-towns in the south of the Sultan's dominions. Both have been till recently notorious in the slave traffic of East Africa, which has all but depopulated an extensive region of the country behind these former seats of export. *Lindi* and *Mikindani Bays*, north of the mouth of the Rovuma, are also important starting-points for the Nyassa country. At the village of *Tungue*, immediately south of Cape Delgado, the Sultan's dominions touch the possessions of Portugal.

11. In all Eastern and Central Africa south of the Sudan, the place of the camel of the Sahara or of the ox-waggon of the Cape Colony is taken by porters or *pagazi*, who march along in Indian file, carrying on their heads the bales of cloth or of beads which serve as the medium of exchange for ivory and other inland products that are brought back to the coast. This is a necessity solely on account of the little *tsetse* fly, the bite of which is fatal to cattle and horses, and against which no remedy or preventive has yet been discovered.

The most frequented of the many caravan routes to the interior are those

which lead in several parallel lines from the coast-towns of Bagamoyo and Saadani, opposite the island of Zanzibar, up through the countries of Usagara and the dry plains of Ugogo, to converge at the Arab settlement of *Tabora* (*Unyanjembe*) in Unyamuesi, at a distance of nearly 500 miles from the coast. From Tabora several routes lead northward to the countries of Karague and Uganda, surrounding the great Victoria Nyanza; but the main line passes on westward to the Arab station of *Kauwele*, in the country of Ujiji, on the shores of Lake Tanganyika. Ferrying across the wide lake, the Arabs have extended their trade routes still farther west into the central country of Manyema, and have an important trading station at *Nyangwe*, on the great Lualaba or Congo river, in the heart of Africa, fully a thousand miles west of Zanzibar.

PORTUGUESE EAST AFRICA.

12. All the coast-land of South-east Africa, from near Cape Delgado for 1400 miles southward to Delagoa Bay, is claimed by the Portuguese, but the points actually occupied by them are few and isolated, and their Government and trading relations are even in a more backward condition than on the west coast. The possession as a whole is named the *Province of Mozambique*, and is placed under a governor appointed by the Crown of Portugal, who has almost unlimited authority in the management of the settlements. He is aided by a small military force composed chiefly of Portuguese convicts.

13. The province is divided into nine districts, which we may follow in order from north to south :—

(1) The first is that named from *Cape Delgado*, which includes the long coast chain of the twenty-eight Querimba islands south of it, only four of which are inhabited. One of them contains *Ibo*, the small capital town of the district, opposite which a trade route leads into the interior.

(2) Next comes the district of Mozambique proper. The capital of the province stands on a small coral islet close to the mainland, in front of a fine bay, and its white houses form narrow streets. An old convent serves as the Government house, but the Portuguese here are very few, and chiefly convicts. Indian Banyans or merchants carry on most of the trade in vessels manned by Arab seamen. At *Messuril*, at the head of the bay, a great fair is held in autumn, to which the Waiyau negroes of the interior come in caravans of about 3000 men, bringing ivory, gum-copal, and hides, to exchange for manufactured goods.

(3) The third district is that of *Angosha* or *Angoxa*, and includes the chain of islands of that name along the coast, as well as the *Primeira chain*.

(4) The more important district of Quilimane reaches south to the Luabo or chief mouth of the Zambezi, and extends inland to its tributary the Shire river. *Quilimane*, the capital of this district, lies twelve miles from the sea, on what may be called the most northerly delta branch of the Zambezi, though the channel connecting this branch with the river is now dry and choked with vegetation at most times of the year. A few traders in ground nuts and wax, and in ivory when it can be had, have factories here.

(5) The fifth district is that of *Sena*, extending across the Lower Zambezi, round the ruinous village of this name, which lies on the southern bank of the river, about 120 miles from its mouth. It is now a ruinous place, having

frequently been attacked by the Landeens or Zulus of the country southward of the river, and is quite neglected by the Portuguese authorities.

(6) The district round *Tete*, 260 miles up stream, formerly exported grain, coffee, sugar, oil, indigo, besides gold-dust and ivory; but the lucrative slave-trade took the place of agriculture and mining, and the natives of the surrounding country were captured and sent down the river in such numbers that the Portuguese found they had no hands left to labour or to fight for them, and were obliged to abandon the settlement. The village has now only about thirty European houses.

(7) The district of *Sofala*, extending along the coast south of the delta of the Zambezi round the bay of that name, was renowned in ancient times for its wealth of gold and ivory, and the gold-fields of *Manica*, which are supposed to lie about 130 miles north-west of the port of *Sofala*, were at one time worked on a large scale by the Portuguese; but the warlike *Kafirs* from the south have now occupied all the interior country, and have apparently obliterated all knowledge of their exact position.

(8) Next we come to *Inhambane*, the chief town and port of the eighth district, which is a more considerable place, carrying on an important trade in the usual products. A large church and a mosque are prominent in the buildings of the town, which lies at the head of a deep bay, environed by coco-palms. Here the Portuguese authority is restricted to the immediate neighbourhood of the town, for since the advance of the Zulu *Kafirs* over the interior country they are neither feared nor respected in this part of their nominal dominions.

(9) Lastly, in the south we reach the district surrounding *Delagoa Bay*, with its capital of *Lourenzo Marquez*. Here the Portuguese rule is even more curtailed, and does not extend beyond the range of the rusty cannon of their fort. For some years the possession of the bay was in dispute between England and Portugal, for though it is unhealthy its spacious harbour seems to form the natural outlet of the Transvaal region. In 1875 the question was submitted to the President of the French Republic for arbitration, and it was decided in favour of Portugal that the southern limit of their territory is the line of 26° 30' S. lat., and the *Usutu* or *Maputa* River, and that it extends about twenty-five miles inland to the range of hills called *Lobombo*.

14. Within the Portuguese East African coast-land lies the great Lake *Nyassa*, which was discovered by Dr. Livingstone in 1859. On a promontory of its southern shores the mission station of *Livingstonia* was established in 1876, and at the same time, the first steam vessel placed on any African lake, was launched on its waters.

A second mission station named *Blantyre* has since been founded in the hilly country south of the lake, between the *Shire* River and the enclosed basin of Lake *Shirwa*. More recently still (1878) a company of merchants of Glasgow has placed a trading steamer on the Lower Zambezi to keep up communications between the coast and the cataracts of the *Shire*, past which a road is being constructed to the navigable portion of the upper river. The Portuguese at first imposed almost prohibitory dues on British goods passing into the Zambezi, but now a favourable commercial treaty has been concluded with them, and it may be anticipated that British intercourse and commerce will become extensive in this part of East Africa.

SOUTH AFRICA.¹

1. In South Africa the British are dominant. From the limits of the former Dutch colony round the Cape of Good Hope in the south-western corner of the continent, their influence has been gradually spreading northward, till at the present time it may be said that all the land from Cape Frio, where the Portuguese West African possessions terminate, to the Limpopo river and Delagoa Bay, on the east, acknowledges the British authority.

The Cape Colony proper and Natal are the older possessions; more recently the Transvaal region and all the western region of Namaqua and Damara Lands have been added to the South African dominion. Within the space indicated the Orange Free State is the only country which has a settled government independent of Great Britain.

CAPE COLONY.

2. The Cape Colony occupies the extremity of the continent, from the Orange River west and south to the Atlantic and Indian Oceans, its landward frontier on the eastern side being marked by the Kei river and the crest of the Drakenberg mountains. It extends over an area nearly four times as large as that of England.

3. **Physical Features.**—The surface of the country generally is high. From the seaboard to the interior it rises step by step in a series of well-defined terraces and mountain edges, which run in an east to west direction, or parallel to the coast and to each other. The outer or maritime ranges have many names in their different parts, the most prominent of which perhaps are those called the *Langebergen* and *Outeniqua* mountains, next the sea in the south, and the *Zwartebergen* farther inland. These outer slopes are the most habitable parts of the colony, and are occupied by villages, corn farms, and vineyards, orchards, and tobacco plantations. Beyond the *Zwartebergen* lie wide undulating plains called the *Great Karroo*. Throughout this tract, for a distance of nearly 200 miles, farms are few, for water is scarce, and the water channels which furrow its surface are dry excepting after thunder-storms, or furnish only a few brackish pools. The land here is treeless; in some parts stunted bushes are thinly scattered, and at most times of the year the prospect is arid and dreary. Yet after rain, as if by enchantment, the whole plain is covered with a lovely green vegetation, with flowers of every hue. This part of the colony is divided into great sheep "runs," and is the main wool-yielding area.

	English sq. miles.	Population.
¹ Cape Colony (with Basutoland and Kafraria)	223,360	1,250,000
Griqualand West	17,500	45,800
Natal	18,260	356,500
Transvaal (under British suzerainty)	114,000	315,000
Namaqua and Damara Lands	175,000	140,000
British South Africa	548,120	2,107,800

On the inner border of the Karroo the *Roggeveld* and *Nieuweveld* mountains present a bold escarpment of flat-topped hills, and reach east to join the *Sneeubergen*, in which Compassberg, the highest summit of the Cape Colony, reaches a height of about 8000 feet; beyond this the heights unite with the great escarpment of the *Drakenbergen*, which faces the Indian Ocean. The line of heights just traced forms the central water-parting of the Cape Colony; southward the water channels drain from it to the Atlantic and Indian Oceans, passing the outer ranges of mountains by rugged deep-cut gorges called "kloofs." Towards the north the periodical streams find their way in deeply sunk channels across the dry plains of Bushmanland to join the Orange river. The south-western peninsula of the colony, which terminates in the famous Cape of Good Hope, is one of the most remarkable features of this region, for within it the massive walls of *Table Mountain* rise to a height of 3582 feet, and nowhere else in the colony is there a landscape combining such grand mountain and woodland scenery.

In general the streams of the Cape Colony resemble those of Algeria at the opposite extremity of the continent, becoming furious torrents after rain, but dwindling down almost to dryness at other seasons. Not one of them is of any considerable value for navigation. The largest, the *Orange River*, is a finer river above, immediately after the confluence of its upper tributaries the *Vaal* and the *Nu-Gariep*, which receive more constant supplies from the *Drakenberg* range, than it is lower down in its westward course to the Atlantic. But it is obstructed by rapids and falls, and its mouth is blocked up by a sand-bank, so that it is of no value as a commercial highway. All along the north of the colony its channel is hemmed in by precipitous walls of rock, between which it descends in formidable cataracts. The drains which it receives from the Cape Colony are only filled with an evanescent supply, after a heavy thunder-shower may have fallen on the thirsty plains through which they pass. Of these the channel named the *Hartebeeste* is the longest.

Among the rivers which flow outward directly to the Atlantic, the *Olifants' River* of the west is the most important; in times of flood it overflows its banks like the Nile, depositing on these a rich sediment of mud which it has carried down from the Karroo, and over these inundated tracts heavy grain crops are grown. The *Brede*, the most westerly of the streams which flow due south, affords a very short navigable reach; the *Gauritz* and *Gamtoos* farther east, are at times rapid and dangerous torrents; and the *Great Fish River*, in the south-east, is also nearly a periodical stream, seldom flowing at all in winter, but rising as much as 30 feet in a few hours after summer thunder-showers. Round towards the eastern slope to the Indian Ocean the streams have a more constant flow, and become serviceable for irrigation and motive power.

4. *Climate*.—The Cape Colony is not a hot country; the greatest heat of summer does not exceed that of similar days in the warmer parts of Europe, and in winter the thermometer falls below the freezing-point. A clear buoyant dry atmosphere is characteristic, and the seasons are distinguished as in Europe, though of course at opposite times—January falling in mid-summer, July in mid-winter. Round the coast-lands of the south and east the amount of rainfall is about the same as the average in England, and the amount increases northward towards Natal; but in the interior and towards the west the quantity gradually decreases, till on the plains which slope to the Orange River, the yearly fall does not exceed nine inches altogether; and on the coast-land about the mouth of the Orange River, rain is almost unknown. The dis-

1 Or "Elephant's" river; spelt *Oliphants* on maps to distinguish it from a tributary of the *Gauritz* which bears the same name.

tribution of the rainfall on the two sides of the colony, however, is remarkably contrasted in season. Over the south-western maritime region the rain is brought by the westerly winds which prevail in *winter* (April to October); the easterly seaboard, on the contrary, has its rains in the *summer* months (September to April). In the inland district summer thunder-storms are at times fearfully grand, and are accompanied by short heavy downpours. Snow lies for three or four months on the highest inland ranges.

5. *Products*.—In the natural flora of the Cape Colony the heaths have a world-wide fame, as well as the bulbous plants and orchids which cover the ground in September and October with a sheet of gaudy blossom. Not a few plants of cactus-like form are remarkable for their singular appearance. Thorns and prickles are also characteristic of many South African plants, and form a natural provision for dispersing the seed-vessels; some trees, such as the “dornboom,” have spikes which have been compared to ox horns.

Wheat is one of the main cultivated products, and it is grown in many districts, along with maize, oats, kafir-corn, and barley. The grapes of Constantia, on the peninsula of the Cape of Good Hope, are said to be the finest in the world.

Though the elephant, rhinoceros, and giraffe, lions and leopards, were common in the Cape Colony at the time of its earliest settlement, these larger animals have now been driven far north into the interior beyond the frontier; but herds of antelopes, quaggas, and blaauks still migrate south of the Orange River, and the hyenas and jackals keep their place. Since the migration of the larger wild animals, sheep and goats have multiplied in an extraordinary degree, so that in 1875 there were found to be about twelve millions of sheep in the colony, and the wool they yield in immense quantity has become the staple export. Draught oxen, dragging the great canvas-covered waggons, are still the chief means of conveyance in the colony, wherever railways have not been constructed. A newer and remarkable industry of the colony is that of ostrich-farming, the birds being fenced in and stabled like sheep or horses, to be plucked of their valuable feathers when these come to maturity; their eggs are also hatched in artificial nests warmed by hot water.

The only important mineral district of the colony as yet is that of Little Namaqua-land in the north-west, near the lower Orange River, where the copper mine of *Ookiep* is one of the richest in the world, and is now sunk so deep that the miners take twenty minutes to ascend from the bottom to the open air. The diamond-fields, to which we shall afterwards refer, lie beyond the border of the colony proper.

6. *People*.—The colony is as yet but sparsely peopled, there being a square mile of territory to each five or six individuals. The Europeans are now the most numerous section of the population, and are mainly *British and Dutch*: part are also German and French (the descendants of Huguenot emigrants), and there are a few Portuguese. The Dutch, or the descendants of the earlier colonists, are still more numerous in the western districts; the English prevail in numbers in the east. The former retain their language, but English has been the official language since 1822.

There are now very few pure *Hottentots* within the limits of the colony, though these were the only inhabitants of all its central and western regions at the time of its discovery. Those who still live south of the Orange River are of pale yellow-brown colour, generally below the average size, light-hearted and indolent.

The *Kafirs* form by far the largest share of the native population in the eastern districts. They are altogether different from the *Hottentots*; tall, dark brown in colour, active and well made, inclined to a pastoral life and to warfare, but not to agriculture. Many thousands of them within the colony

can no longer be called savages, and having been brought under the influence of European civilisation, wear clothes, and understand English or Dutch.

There are also a considerable number of *negroes*, descendants of slaves, introduced in earlier days chiefly from Mozambique, and not a few *Malays* in the seaports, originally brought from the Dutch possessions in the East Indies, and still adhering to Mohammedanism.

7. **Government.**—The Government of the Cape Colony is entirely European, the head of the administration being a governor appointed by the Queen. He is also commander-in-chief of the troops, and is invested with powers beyond the limits of the colony proper. Since 1854 the legislative power has been entrusted to a Parliament formed on the British model, consisting of an Upper and Lower House.

8. **Divisions and Chief Towns.**—For the purposes of electing representatives for the Parliament, the colony is now divided into seven provinces and thirty-two divisions. The metropolis of the colony, the seat of Government, and the great commercial entrepot, is *Cape Town* (45,000), which spreads out between the skirts of Table Mountain and the shores of Table Bay. Scarcely anything remains now to indicate that it was founded by the Dutch: gas-lighting, gardens, tramways, and railway termini, are not wanting to give it all the air of a European town. Of the two railways which start from Cape Town, the longest is that which leads to *Worcester* amidst the outer mountains, and which is to be extended across the Great Karroo; the other leads to the *Wynberg* or vineyard hill, where the rich vines of Constantia are grown. The second town of the colony is *Port Elizabeth* on Algoa Bay in the east, a bustling seaport full of warehouses and stores. Huge waggons bring down the wool and hides from the interior farms for shipment here, and return inland with merchandise for the villages. Lines of railway have also been made to unite Port Elizabeth with *Grahamstown*, the chief place in the interior north-east of it, and with *Graaf Reinet*, in the farming country on the east of the Great Karroo. *King William's Town* is the chief place in the fertile territory formerly known as British Kafraria, and is the chief town on the eastern border. It carries on a considerable trade through its port of *East London*.

KAFRARIA.

9. The country eastward of the Cape Colony proper, along the slope from the Drakenberg range to the Indian Ocean, as far as the southern border of the colony of Natal, is named Kafraria or *Kafirland*.

The name is perhaps a misleading one, inasmuch as this district has no more special claim to be called the land of the Kafirs than any other portion of the wide region of Eastern Africa which they inhabit; but it is along this maritime slope that the European colonists, spreading gradually eastward, have come most directly into contact with these people, called still by the Arab name of Kafirs or infidels. The *Kei* river bounds this territory in the south, and the *Bashee* and *St. John's* are its other chief streams. It is a fertile and well-watered country, wooded towards the mountains, and possessing luxuriant pasture-lands, adapted either for agriculture or for cattle-rearing.

10. The districts which are now under the control of British magistrates are those of the *Fingo* Kafirs east of the Kei River; the district of the *Tambukis* north-westward of the former; the district named the *Idutyroa Reserve* east of the Fingos, the country of the *Pondomise* Kafirs in the upper basin of the St. John's River; that of the *Amapondo* Kafirs, who occupy each

side of the lower St. John's River, and *Nomansland* in the north, next Natal, occupied chiefly by a division of the *Griquas*¹ (half-caste Hottentots). Since the rebellion of 1877 the district of the *Galeka* Kafirs, adjoining the Kei River on the south of this region, has been incorporated as an integral part of the Cape Colony.

11. *Basutoland*, a district which embraces the mountains and valleys which lie round the sources of the Orange River, was proclaimed British territory in 1868, and was added to the Cape Colony as a magistracy in 1871. Its inhabitants, the *Basutos*, are a branch of the great Bechuana group of Kafirs, superior to most of the other nations in intelligence and industry, but less warlike, and of smaller physical powers. Nevertheless, this district rose (1880) in rebellion against the British authorities.

NATAL.

12. By the addition of the districts of Basutoland and of Kaffraria to Cape Colony this has been made conterminous on the south-west with the colony of *Natal*, which, somewhat larger in area than the half of Scotland, reaches down from the Drakenberg edge to the Indian Ocean between the *Tugela* river on the north, and the *Umtamfuna* on the south.

13. The country is covered for the most part by ramifications of wooded mountains and hills, which slope down like the finger of a hand from the higher cliff-like edge of the Drakenberg, 10,000 feet in altitude. Between these, many full and constant streams flow down to the sea across a broad belt of grass land, which separates the mountain spurs from the yellow sands and bold headlands of the coast.

14. Though by position Natal is a semi-tropical country, its climate is healthy and agreeable, the heat of summer is not intense, and the winters are delightful. Rain falls in all months, but in greatest quantity in the summer. Its pastoral lowlands are well stocked with cattle, sheep, and horses; a large number of sugar estates are in active operation; coffee, wheat, oats, and maize, are also cultivated to a considerable extent.

15. Its inhabitants are mainly Kafirs, natives of the soil, and refugees from the neighbouring countries, especially from Zululand on the north. The indolence of these natives has led to the introduction of Hindu "coolies" to work on the sugar plantations; the English are comparatively very few in numbers, as are also the Dutch and Germans.

16. Nearly half of the European settlers are gathered in the two towns of the colony, the seaport of *Durban* or Port Natal, and *Pietermaritzburg*, the seat of Government, sixty miles inland by road. A good portion of the coast produce of Natal finds its way inland by waggons over the rough mountain tracks across the Drakenberg range into the Orange Free State and the Transvaal, which countries lie up on the interior plateau, and by the same ways large quantities of wool, ostrich feathers, and ivory come down to be shipped at Durban.

ORANGE FREE STATE.

17. The Orange Free State, the history of which has been sketched in a former chapter, is reached by long rough waggon

¹ See p. 323.

routes, either from Port Elizabeth or through Natal. In the south and south-east its limits are formed by the upper *Orange* River, and by the crest of the Drakenberg; on the north-west and north the *Vaal* tributary embraces it and forms its boundary. Its area is about a fourth larger than that of Ireland.

18. The country consists of great undulating grassy plains, at a general elevation of about 4000 feet above the sea, and is dotted here and there with little "kopjes" or rocky hills in the south-east, though in the northern portion there is scarcely a break in the level horizon. Its plains are thus admirably adapted for raising sheep and cattle; pastoral farming is the main industry of the country, and wool is its chief export.

19. Owing to its elevation, the climate is well suited to Europeans, being cold in winter and very dry in summer. In the hot season violent thunderstorms occasionally break over it. The population is as yet a very scanty one, not so much as two to a square mile over the extent of the country, and nearly equally divided between Europeans, chiefly of Dutch descent, and native Bechuana Kafra.

20. The Government is republican, executive power resting in an elected President, the legislature being vested in a "Volksraad" or Council of the people, chosen for four years. This Council meets at *Bloemfontein*, the capital of the state, a small place on the Modder River, a tributary of the Vaal. Education is well advanced, and the constitutional Church of the state is the Protestant Dutch Reformed, but a branch of the Anglican Church of South Africa is also represented by a bishop and a large clerical staff.

THE TRANSVAAL.

21. This Boer Republic under British suzerainty extends, as its name implies, beyond the *Vaal* River, which forms its southern boundary, away northward for more than 300 miles, to where the upper *Limpopo* River curves round from south-west. On the east it reaches past the Drakenberg range to the Lobombo hills, which separate it from the Portuguese territory round Delagoa Bay. Farther south the crest of the Drakenberg forms its limit towards Zululand and Natal. Its area is not far short of that of Great Britain and Ireland together.

22. **Physical Features.**—The land generally is a plateau about 3000 feet in average elevation above the sea, supported on the east by the high buttress of the Drakenberg range, and reaching westward towards the desert region of the Kalahara. Within it, however, two ridges of small relative height extend across from west to east. These are (1) the *Magalies* or *Kashan* mountains, which form the edge of a higher portion of the plateau called the "Hooge Veldt" or high field, in the south; and (2) the *Waterberg*, *Hangklip*, *Makapans*, and other small ranges, in the north.

Three classes of country, distinguished in their general character, are recognised. These are (1) the "*Hooge Veldt*" with bracing climate, most of which is in the south, occupied for the most part by grazing-farms; (2) the "*Banken Veldt*," or those portions which lie along the slopes of the Hooge Veldt or along the Drakenberg, consisting of broken hilly country, intersected by deep ravines or "kloofs," picturesque in scenery, and well watered and

wooded with small trees, well adapted also for grazing or for cultivation where the surface is not too hilly; (3) the "*Bush Veldt*," including all the land on the north and east, covered as yet for the most part with *Mimosa* groves and thorn thickets, sub-tropical in climate.

23. The two main rivers are the *Ky Gariep* or *Vaal* in the south, and the *Limpopo* or Crocodile River, which includes all the northern and central region in its drainage basin. The *Nyl Strom* and the *Olifant* are the chief tributaries of the *Limpopo* in the Transvaal territory. None of these are of any value for navigation, for though they gain considerable depth in the rainy season they sink to show sandbanks and rapids in the dry weather.

24. *Climate*.—The territory reaches northward to beyond the tropical line, and would have a sub-tropical climate over its whole extent were it not for its great general elevation, which gives all the south a mild temperature well suited to Europeans. Fevers are prevalent in the Lower *Limpopo* valley in the north.

25. *Products and Industries*.—Pastoral pursuits are characteristic of the country; sheep, cattle, and goats thrive well almost everywhere, but horses require to be removed to the higher hills in summer, as they are very liable to disease here as in many other parts of Africa. The *taetse* fly is also the scourge of some districts of the back country, so that a "*scutled*" horse, or one which has been bitten and has recovered, takes a high value, as it can afterwards pass scatheless. Wild animals are very numerous still, though hunting has done much towards the inner and northern borders. Lions, elephants, giraffes, ostriches, and all kinds of antelopes and zebras, are still abundant there. The Transvaal is becoming celebrated for its mineral wealth, especially for its gold, which seems to be abundant all over the northern region.

26. *People*.—The greater part of the inhabitants are Bechuana and Basuto, Zulu and Makatee Kafirs, most of them still nearly barbarous, though many are employed as domestics and as field-labourers. The European population (about 40,000) is mainly composed of "Boers," or farmers of Dutch extraction, the smaller share of British and Germans. These are for the most part Protestants belonging to the Dutch Reformed Church and to the Church of England.

27. *Government and Chief Towns*.—We have already sketched the main points in the history of the Transvaal—the migration thither of the Boers from the Cape Colony, the early prosperity and later ruinous condition of the republic they founded, and its final annexation by the British. The foreign affairs of this commonwealth are now directed by a British Resident stationed at *Pretoria*, the seat of Government, situated on the northern base of the *Magaliesbergen*, near the centre of the territory. For administration and election of members for the *Volksraad*, or Parliament, the country is divided into thirteen districts, which correspond to the chief villages, for there are no towns properly so called as yet. These are Zoutpansberg and Waterburg in the north; Lydenburg and the gold-fields, Middelburg, Pretoria, Rustenburg, and Marico in the midland region; Utrecht, Wakkerstroom, Heidelberg, Potchefstroom, and Bloemhof in the south. The largest village or small town is that of *Potchefstroom* or Mooi River Dorp, in the south of the state.

At present most of the external traffic of the Transvaal passes by the waggon tracks down the difficult passes of the Drakenberg to Natal. The construction of a railway by way of Lydenburg east to Delagoa Bay has long been in contemplation, as this line appears to be the natural outlet of the country.

GRIQUALAND WEST, OR THE DIAMOND-FIELDS.

28. The territory of Griqualand West was so named from its having been occupied by a section of the Griquas or "Bastards," half-caste Hottentots who migrated with the Boers from the Cape Colony in the early part of this century. It embraces an area of about 17,000 square miles of the inner plateau, and is a bare and uninviting region, except along the banks of the Orange and Vaal rivers, which join within it, and which are wooded and picturesque. Its climate is healthy, with cold bracing winters and dry dusty summers, interrupted by occasional heavy thunder showers. Were it not for the valuable diamond-mines which were discovered here in 1867, Griqualand would not have attracted attention or have been annexed to the British Crown. Now some of the mines which were most productive at first have been exhausted, and the motley population which gathered here from all parts of the world to the diggings has become reduced and more settled; in *Kimberley*, the capital, brick and stone houses are taking the place of the canvas and wooden shelters which at first served the purposes of the miners.

THE KAFIR KINGDOMS.

29. A broad distinction is to be drawn within the Kafir area of South-east Africa, between the *coast Kafirs*, who extend in many tribes round the maritime region from the Great Fish River to the Zambezi, and the *Kafirs of the plateau* (Bechuanas and Basutos chiefly). The former are generally spirited and warlike, the latter of milder and more passive temperament.

About the beginning of this century, the Zulus, a clan of the coast Kafirs, changing their former patriarchal life, began to imitate the military system of the Europeans, and to organise themselves into severely-disciplined bands. Soon all Kafirland, from the Limpopo southward to the borders of the Cape Colony, fell under their sway, and it was with these warriors that the Boers had to fight when they first migrated into Natal. A number of their bands marched out northward conquering all before them, and, as we shall presently notice, the leaders of these armies founded a number of extensive kingdoms over the wide country which lies south of the great curve of the Zambezi, most of which remain to the present day as strong military despotisms.

30. *Zululand*, or the home country of the Zulu Kafirs, comprises that portion of the maritime slope of South-east Africa which lies between the Tugela river (the northern boundary stream of Natal) and the Portuguese territory about Delagoa Bay. Until 1879 it was under the rule of the warlike chief Cetywayo,¹ and was well peopled. All the men of adult age were under military organisation, and the fighting strength of the tribe was estimated at from 35,000 to 40,000 men. The presence of this strong military organisation on the immediate frontier, and the threatening attitude of its chief, was one of the main causes which made it imperative that the Transvaal should be placed under a stronger rule than that of the Boers. The British have, however, quite broken up this military power, and the country is now divided into districts governed by local chiefs, all under British supervision.

31. The *Gasa Country*, which stretches north from Delagoa Bay to the lower Zambezi, inland from Sofala and Inhambane, is under the Zulu chief *Umzila*, who is sole ruler of all this vast territory excepting the few points along the coast to which the Portuguese authority has now been limited.

¹ Pronounced "Ketchwayo."

32. Inland from this extends the kingdom of the *Matebele Kafirs*, which is also a complete military despotism. This portion of the land rises higher than the Gasa country, attaining elevations of 4500 feet in the picturesque granite hills called the *Matoppo* and *Mashona* ranges. Lo Benguela, the king of this country, resides at the "kraal" or village called *Gibbe Klaike* or Gubuluwayo on the southern slope of the Matoppo hills.

33. A Basuto or plateau-Kafir tribe, called the *Makololo*, also adopted the military system of government, and made a march of conquest northward in the early part of this century through the Transvaal to the middle valley of the Zambezi. Enslaving the Barotse natives of the river valley, they formed a powerful kingdom, which stretched south and north across the Zambezi. Intrigues and dissension for the succession to the chief authority, however, gave opportunity for the Barotse to rise against their conquerors, and revenging themselves for their years of servitude, they destroyed the Makololo completely.

THE KALAHARA DESERT.

34. The Kalahara represents the area of the interior of South Africa which is most deficient in moisture supply, and reaches away north from the Orange River as far as to about the 20th parallel of south latitude. The gradation from the fertile grassy plains of the Transvaal and Orange Free State to the desert is a very gradual one, like that from the Sudan to the Sahara in the north. The Kalahara has no running water, and is for the most part a dry sandy region, but it is not devoid altogether of vegetation, consisting of tufty grass, and creeping plants, with deeply-buried bulbous roots, excepting in the centre. The *Bushmen* or *Saan* are the nomads of the Kalahara. They are of low stature, thin, and wiry; they never try to cultivate the land, and have no homes, but chase the antelope herds from place to place, lying in wait for them with bow and poisoned arrows.

NAMAQUA AND DAMARA LAND.

35. West of the Kalahara the extensive countries of the Namaqua Hottentots and of the Damara Kafirs reach over the hilly border lands of the continent down to the arid shores of this part of the Atlantic.

Namaqualand is in general a dreary region, with scanty vegetation of grasses and prickly shrubs, furrowed by water channels which flow only for a short time after the scanty showers. The coast-land is sandy and waterless, overhung by an almost constant haze.

Damaraland, farther north, is a little more favoured in aspect in its hill slopes, but is also deprived of any permanently flowing waters. Cattle and ostriches seem, however, to be numerous, and considerable deposits of copper have been found.

36. The people of Damaraland are distinguished as the *Ova Herero*, or Cattle Damaras, a tribe which migrated hither probably from the Zambezi valley; and the *Houquain*, a black or negro-like people, supposed to be aboriginal, who had previously been enslaved by the Namaquas, and who have adopted the Hottentot language. A few Bushmen, Griquas, and Europeans, chiefly members of the Rhenish mission, are found here also.

37. The only highway or regular track into Namaqua Land from the Atlantic leads from *Angra Pequena Bay*, formerly visited by guano ships, to the mission station of *Bethany* on the plateau. From *Walfish Bay* (or the Whale-fishers' Bay) tracks also lead inland to the mission stations of *Windhoek* and *Barmen* in Damaraland.

North of Damaraland a number of tribes resembling the Damaras in features, and classed together as the *Ovampos*, occupy the fertile tract of country which lies south of the Cunene river, or of the Portuguese province of Mossamedes.

THE ISLANDS ROUND AFRICA.

MADAGASCAR.

1. The islands in the seas round Africa, excepting those small fragments which lie close to its shores, do not belong distinctly to the continent as the British Isles do to Europe, or Java and Sumatra to Asia. The great island of *Madagascar*, for example, should rather be considered as a small separate continent than a part of Africa, for its human inhabitants are altogether distinct in race, and many of its animals are peculiar to it.

2. **Physical Features.**—The island of Madagascar extends nearly a thousand miles from north to south; it occupies a space larger than France, and is separated from the mainland by the broad and deep channel of Mozambique, which is 240 miles wide at its narrowest point.

The great physical feature of the island is the enormous plateau-like mass, averaging 3000 to 4000 feet in elevation, which begins at its northern extremity and reaches almost throughout its length, leaving wide plains only on the south and west. Along the shore, especially towards the east, there extends a marshy fever-haunted belt, beyond which the land rises in wooded terraces to the healthy grassy plateaus of the interior.

The central districts of the island have been the scene of volcanic phenomena on a large scale, and there the *Ankarat Hills* occupy a space some 600 square miles in extent, with lava-covered peaks, attaining elevations of 8900 feet above the sea, and presenting many hundreds of extinct volcanic craters.

The south-western and the eastern slopes of the island are remarkably contrasted in aspect. The lands facing the Indian Ocean, and the direction of the prevailing trade wind, are very fertile, owing to the frequent rains which water them; but the leeward or western side is poorly covered with vegetation, and is but thinly inhabited, except along the courses of the few streams.

3. **Products.**—Characteristic of the landscape of Madagascar is the "Traveller's Tree," the leaf stalks of which contain, it may be, a quart of pure water, even in the driest weather. Among minerals, silver, copper, iron, coal, and salt are found. The fauna of Madagascar is a peculiar one, lemurs or timid nocturnal half-apes, and insect-feeding animals predominating. There are none of the larger wild animals which are so common on the continent of Africa.

4. **People.**—The *Malagasses*, as the inhabitants are called, are also in no way connected with the natives of Africa. They form part of the Malay family, and follow the same customs as those of the East Indian archipelago, showing also the same type of features and using an allied language. They are divided into three chief tribes—the *Betsimisarakas* east, the *Sakalavas* west, and *Hovas* central, the last being the dominant branch. From very early times the Arabs have visited and had colonies on the north coast, and with them came the slave trade, so that in this part of the island there is a considerable admixture of Arab, Swaheli, and negro peoples. Indian traders also frequent the ports. Cattle-herding and agriculture are the main industries of

the island; silk and woollen weaving are also carried on; and beautifully dyed cloths are made from the fibre of the palm.

5. **Government and Chief Towns.**—Madagascar forms an independent kingdom under the rule of a Hova dynasty. Christian missionaries have long been labouring in the island, and although the last queen but one was a zealous heathen, her successor in 1869 abolished all the old rites, committed the idols of the whole nation to the flames, and was subsequently baptized.

The capital, *Antananarivo*, lies on a high plateau near the centre of the island. *Tamatave*, the chief seaport on the east coast, is the only other native place of much importance.

6. The French have several settlements on the northern coasts, which are under their government, seated in the Comoro Isles. On the north-west coast they have the island of *Nossi Bé*, the harbour of which has the little town of Helleville; the bay of *Bali* farther south, the *Minou* islets, and *Antombuk* bay on the extreme north of Madagascar, are also theirs; and on the east coast they hold the more important possession of the island of *Ste. Marie*, or Nossi Burra, which has the fortified port of St. Louis.

COMORO ISLANDS.

7. The Comoro islands, four in number, high and volcanic, lie in the northern part of the Mozambique channel between Madagascar and the mainland. They are inhabited by Arab tribes chiefly, who are under a sultan resident in the Great Comoro. *Mayotta* island, however, belongs to France. The islands carry on a brisk trade with Zanzibar, Mozambique, and the ports of Madagascar.

8. Almost due north of Madagascar lie the twin coral groups of the *Amirante* and *Seychelles* islets, both British possessions. These are richly covered with palms and date trees, and have excellent harbours.

MASCARENHAS ISLES.

9. The Mascarenhas Isles, far out at sea east of Madagascar, comprise the French island of *Bourbon*, or *Réunion*, and the two British, of *Mauritius* and *Rodriguez*. The first has been a French colony since 1649, and consists of two very high groups of volcanic mountains separated by a plain. It is extremely fertile, producing large quantities of coffee, sugar, and spices, for export by its capital and chief port of *St. Denis*. *Mauritius*, called *Ile de France* before it was ceded by the French in 1814, is also famous for the beauty of its landscape, and for its products like those of Bourbon, and its valuable woods. *Port Louis* and *Mahébourg*, or Grand Port, are its chief towns.

SOCOTRA.

10. Opposite Cape Guardafui, the eastmost apex of Africa, lies the island of *Socotra*, about as large as our county of Cornwall, rising by terraces to a considerable height in the interior. The greater part of the surface is pastoral table-land within unfertile borders. The aloe plant and the dragon's-blood gum tree are its chief commercial products. It has a small Arab population, under a governor appointed by the Sultan of Keshin, on the opposite south coast of Arabia. In 1876 the British political agent at Aden visited Keshin and *Socotra*, and concluded a treaty by which the Sultan agreed never to cede the

island to any foreign power, and never to allow any settlement on it without the consent of the British Government.

MADEIRA.

11. On the same parallel as central Morocco, 360 miles out in the Atlantic, lies the Portuguese islet of *Madeira*, "the wood," a little larger than the Isle of Man, with its satellites of *Porto Santo* and the rocky *Desertas*. It is famous for its delightful climate, its vintage, and its picturesque beauty. Besides its rich fruits, the sugar-cane is now largely cultivated and exported from *Funchal*, its town and port, which is in regular communication with Liverpool and Lisbon.

CANARY ISLANDS.

12. In about 15° N. lat., at no great distance from the shores of Africa, is situated the Spanish *Canary group*, the "Fortunate Islands" of the Ancients, also renowned for their fine climate. The seven large islands forming it lie in an eastern and western division, the former having *Lanzarote*, *Fuerteventura*, and *Gran Canaria*; the latter, *Teneriffe*, *Gomera*, *Palma*, and *Ferro*, whence longitude used to be reckoned. They are all of volcanic origin and high, the largest and tallest peak being that of *Tenerifa* (12,180 feet). The Spaniards look upon the Canaries as belonging strictly to the mother country, but the population is a mixed one, descended from the intermixture of the Spaniards and the native *Guanchos*, a brave but peaceful shepherd people. Agriculture, cattle-breeding, and the cultivation of the cochineal insect, are the industries of the islands. The most important towns are *Las Palmas* on *Gran Canaria*, *St. Christobal* and *Orotava* on *Teneriffe*.

CAPE VERD ISLANDS.

13. Farther south, due west of Cape Verd, lie the fourteen islands named from it, also of volcanic origin. Nine are inhabited, principally by negroes and mulattos. *Santiago*, the largest and most fertile of the group, rises to a height of 7380 feet, and has the chief town. *St. Vincent* islet is the chief point of the group, both from its excellent harbour, at which a great coaling depôt has been formed for the Atlantic steamers, and as a station of the Anglo-Brazilian telegraph line. Its aspect is that of a volcanic crater, and it is utterly barren, presenting gray, brown, and reddish-coloured slopes.

ST. HELENA AND ASCENSION.

14. We have already noticed the line of volcanic islands which reaches into the Gulf of Guinea. If we prolong their direction out towards the centre of the Atlantic, we reach the solitary islet of *St. Helena*, which rises as a huge dark mass of rock abruptly from the ocean, reaching a height of 2700 feet in *Diana's Peak*. Numerous brooks water it, and plantations of firs and chin-chona trees cover some parts of it. Its climate is healthy and mild. A governor appointed by the British Crown commands its garrison of about 200 men, and about 700 ships call at its port of *James Town* every year. *Ascension*, far north-eastward of it, and equally solitary, is a bare volcanic islet, retained by Britain mainly as a station at which ships may touch for stores. In 1871 it had only 27 permanent inhabitants.

AMERICA.

1. THE Great Western Continent, or the "New World," the second in point of magnitude of the great divisions of the land on the globe, reaches north and south between the Atlantic and Pacific Oceans, almost from the one polar region of the earth to the other. It stretches from 80° N. to 55° S. lat., or has a length of more than 9000 miles. Its western or Pacific shores are remarkably continuous, but on the other side the Caribbean Sea and the Gulf of Mexico running in from the Atlantic deeply indent its eastern margin, separating it into two vast peninsulas, called *North* and *South America*, joined by the long narrow belt of *Central America*, the narrowest part of which, the *Isthmus of Panama*, is only 48 miles broad. In area it is second only to Asia, including about 16,000,000 square miles, or more than four times the extent of Europe, the northern portion having about 9 millions, the southern 7 millions of square miles.

2. **Relief.**—The leading features of this continent, distinguishing it from the other great masses of land on the surface of the globe, are given to it by an immense mountain chain, by far the longest and of the greatest *general* elevation of any on the globe, though many summits of the Himalaya attain greater altitudes. This great range rises from the waters of the Antarctic Ocean, and keeping close to the Pacific coast, traverses the entire continent from the Strait of Magellan in the south to Bering Strait in the north. The slopes of the plains eastward towards the Atlantic and the direction of flow of the great rivers are thus determined; and the presence of this vast barrier, by interrupting the flow of the great aerial currents, also controls, in a large degree, the conditions of climate and landscape, of animal and vegetable life over the continent.

The southern portion of this great range, called the *Andes*, is the most remarkable on the globe for its continuity of height. The Patagonian and Chilian Andes reach from Tierra del Fuego and the Strait of Magellan, northward to about the Tropic of Capricorn as a single chain, rising in *Aconcagua* (22,422 feet) to the summit of all the continent. Farther north the chain divides into stupendous ridges or Cordilleras, enclosing between them the wide and lofty plateaus of *Bolivia* and *Perú*, which lie at an elevation of more

FOR EXPLANATORY REFERENCE
See Physical Maps of
Europe & Asia

ARCTIC OCEAN

GREENLAND

Yukon R.

Alaska Mts.

St. Lawrence R.

Hudson Bay

James Bay

Labrador

Quebec

Montreal

St. John's

Halifax

Atlantic Ocean

North Atlantic

South Atlantic

Equatorial Current

South Equatorial Current

120 110 100 West of Greenwich 90

70 60 50 40 30 20 10 0

1850

1860

1870

1880

1890

1900

1910

1920

1930

1940

1950

1960

1970

1980

1990

2000

2010

2020

2030

2040

2050

2060

2070

2080

2090

2100

2110

2120

2130

2140

2150

2160

2170

2180

2190

2200

2210

2220

2230

2240

2250

2260

2270

2280

2290

2300

2310

2320

2330

2340

2350

2360

2370

2380

2390

2400

2410

2420

2430

2440

2450

2460

2470

2480

2490

2500

2510

2520

2530

2540

2550

2560

2570

2580

2590

2600

2610

2620

2630

2640

2650

2660

2670

2680

2690

2700

2710

2720

2730

2740

2750

2760

2770

2780

2790

2800

2810

2820

2830

2840

2850

2860

2870

2880

2890

2900

2910

2920

2930

2940

2950

2960

2970

2980

2990

3000

3010

3020

3030

3040

3050

3060

3070

3080

3090

3100

3110

3120

3130

3140

3150

3160

3170

3180

3190

3200

3210

3220

3230

3240

3250

3260

3270

3280

3290

3300

3310

3320

3330

3340

3350

3360

3370

3380

3390

3400

3410

3420

3430

3440

3450

3460

3470

3480

3490

3500

3510

3520

3530

3540

3550

3560

3570

3580

3590

3600

3610

3620

3630

3640

3650

3660

3670

3680

3690

3700

3710

3720

3730

3740

3750

3760

3770

3780

3790

3800

3810

3820

3830

3840

3850

3860

3870

3880

3890

3900

3910

3920

3930

3940

3950

3960

3970

3980

3990

4000

4010

4020

4030

4040

4050

4060

4070

4080

4090

4100

4110

4120

4130

4140

4150

4160

4170

4180

4190

4200

4210

4220

4230

4240

4250

4260

4270

4280

4290

4300

4310

4320

4330

4340

4350

4360

4370

4380

4390

4400

4410

4420

4430

4440

4450

4460

4470

4480

4490

4500

4510

4520

4530

4540

4550

4560

4570

4580

4590

4600

4610

4620

4630

4640

4650

4660

4670

4680

4690

4700

4710

4720

4730

4740

4750

4760

4770

4780

4790

4800

4810

4820

4830

4840

4850

4860

4870

4880

4890

4900

4910

4920

4930

4940

4950

4960

4970

4980

4990

5000

5010

5020

5030

5040

5050

5060

5070

5080

5090

5100

5110

5120

5130

5140

5150

5160

5170

5180

5190

5200

5210

5220

5230

5240

5250

5260

5270

5280

5290

5300

5310

5320

5330

5340

5350

5360

5370

5380

5390

5400

5410

5420

5430

5440

5450

5460

5470

5480

5490

5500

5510

5520

5530

5540

555

London Published by Edward Stanford 55, Charing Cross Feb. 16, 1882.

J

J

J

J

J

SOUTH AMERICA



1. The first part of the document is a list of names and dates, which appears to be a record of some kind. The names are listed in a column, and the dates are listed in a column next to them. The names are: John, Mary, and James. The dates are: 1810, 1811, and 1812.

than 12,000 feet above the sea. Still farther on, the outer and inner Cordilleras draw closer together in Ecuador, or the equatorial country, and northward of this they break into three distinct ranges, one running north-eastward and bending along the coast of Venezuela to form the high island of Trinidad at its extremity, the second pointing northward to terminate at Cape Gallinas, and the third passing north-westward to form the Isthmus of Panamá.

The lowest summit level between the oceans on each side of the Isthmus of Panamá is 285 feet, to the west of the lake of Nicaragua it is only 240 feet, and on the Isthmus of Tehuantepec, 630 feet. Throughout the rest of Central America there extends a series of table-lands with volcanic cones rising over them, gradually increasing in elevation as the distance between the seas increases, till the great wedge-like *Plateau of Mexico* is reached, the average elevation of which is not less than 7000 or 8000 feet. Here the volcanic peak of *Popocatepetl* (17,783 feet), S.E. of the city of Mexico, is the second-highest summit of all Northern America.

The mass of elevated land, which reaches along the western border of North America from the plateau of Mexico to the Frozen Ocean, presents three distinct mountain ranges. The first is the *Coast Range* of the Pacific, extending from the peninsula of California continuously as far as Vancouver's Island, which is traversed by its prolongation. From this point northward it is interrupted by the broken coast-line and archipelagoes of British Columbia, but it again strikes the coast farther north, where the active volcano of *Mount St. Elias* (19,500 feet) and *Mount Fairweather* are its principal summits. It is this chain also which bends round westward to form the Alaska peninsula and the line of the Aleutian Islands reaching towards Asia.

The next range inward is that of the *Sierra Nevada* of California, which is a direct continuation of the western Cordillera of the plateau of Mexico. Between latitudes 36° and 37° this chain has its summit in *Mount Whitney* (14,898 feet). It stretches continuously northward from the Sierra Nevada, through Oregon, Washington, and British Columbia, where a part of it is named the *Cascade Range*, and passes, with decreasing elevation, across Alaska Territory, to terminate in Prince of Wales Peninsula, on Bering Strait.

The third system is that of the *Rocky Mountains*. It forms the inner buttress of the wide table-land of the "*Great Basin*" which separates it from the Sierra Nevada, and corresponds to the eastern Cordilleras of the plateau of Mexico. From one mountain summit in Colorado twenty-five peaks, each of which is more than 14,000 feet in elevation, can be counted, and that called *Blanca Peak* reaches 14,464 feet. The highest part of the Rocky Mountain range, however, is found in British Columbia, north of the 50th parallel, where *Mount Hooker* attains the great height of 16,760 feet (?). Northward this range also diminishes in elevation, but terminates in bluff heights on the shores of the Arctic Ocean.

3. Great lowlands occupy the central region of the American continent. In North America these central plains reach, in almost unbroken continuity, from the shores of the Arctic Sea to the Gulf of Mexico, the highest elevation of all being the "Height of land," in which the Mississippi river has its sources, and which are nowhere more than about 1500 feet above the sea. In South America also vast levels extend from the plains of the Orinoco in the north across the Amazon basin southward, over the plains of La Plata, into Patagonia.

4. Towards the east the continent again rises; but the heights of the Atlantic border are far inferior in elevation to those of the Pacific side of America. In North America, the high broken coast of Labrador rises from the Atlantic, and farther south the folded *Alleghany* ridges attain a height of 6707 feet in their summit, *Black Dome Mountain*. Beyond the peninsula of Florida, the high chain of the West India Islands leads across to South

America, where the *plateaus of Guayana and of Brazil* correspond to the eastern heights of the northern division of the continent. Here the *Montes Pyrenos*, in the heart of Brazil, attain a height of 9500 feet, and the Peak of *Itatiaia* (8900 feet), on the coast range to the south of Rio de Janeiro, are probably the highest points in eastern South America.

5. **Rivers and Lakes.**—The great lines of mountains on the western side of the continent divert by far the greater part of the drainage eastward to the Atlantic. The four great rivers of North America—the *Mackenzie* flowing to the Arctic Sea, the *Nelson* to Hudson Bay, the *St. Lawrence* to its Gulf in the Atlantic, and the great *Mississippi* to the Gulf of Mexico—are all east of the Pacific heights. In South America, the *Orinoco*, the vast *Amazon*, and the *Paraná*, flow also to the Atlantic.

In North America only three considerable rivers—the *Yukon*, in Alaska, the *Columbia*, and the *Colorado*, find their way over the western plateau and through the gorges of the mountains to the Pacific; but from South America not one large stream flows to that ocean.

All the region of North America on the poleward side of the 40th parallel of latitude is characterised by great lakes, which are more numerous and extensive than those of any other lake region of the globe. Here the basin of the *St. Lawrence* contains *Lake Superior*, the greatest of all fresh lakes on the earth, occupying a space larger than Ireland (32,000 square miles), besides *Huron* and *Michigan* scarcely less extensive, *Erie* and *Ontario*. Farther north, in the basins of the *Nelson* and *Mackenzie*, are the noble expanses of *Winnipeg* and *Deer Lake*, *Athabasca*, the *Great Slave* and *Great Bear Lakes*. But all the rest of the lowland of America is singularly devoid of large lakes. The plateau region of the western border bears only two lakes of importance: the one, the *Great Salt Lake*, 4200 feet above the sea, in the midst of the broadest part of the plateau of North America, between the Rocky Mountains and the Sierra Nevada; the other, *Lake Titicaca*, lying at an elevation of 12,550 feet, in the Bolivian table-land in South America. In the plateau of Central America, the largest lake is that of *Nicaragua*, nearly equal to *Ontario* in extent, and only 131 feet above the level of the sea.

6. **Climate and Landscape.**—If we look at the general chart showing the direction of the prevailing winds, it is noticed that the two great trade-wind currents sweeping over the Atlantic from north-east and from south-east, converge towards the equatorial region on approaching the coasts of America between the tropics. Having gathered much vapour in their passage over the sea, these winds bring copious rain-showers to all the region of the land which lies opposite their path. Thus the huge river Amazon is fed, and the moist, hot climate of the Atlantic slopes of tropical America has produced over these a dense humid forest growth. All the region of the Amazon basin, of the West India Islands, of Florida, and the coast-lands of the Gulf of Mexico, present this richly wooded landscape. The coast-lands of this luxuriantly beautiful region, especially those of the mediterranean within the West Indies, are haunted, however, by the deadly yellow fever. Looking again at the chart of the winds, we see that the great trade-wind currents of the Pacific Ocean seem to draw away from the coast of America; the north-east wind from the region about the Californian peninsula in North America; the south-east from the central portion of the Pacific coast-land of South America, along the base of the Andes. Drawing their supplying currents of air from over the land, and blowing from cooler to warmer latitudes, these winds absorb all moisture, and give no rain supply. Thus, all the region of southern California, and of the great basin within it, appears bare and dry, like the Sahara, in its desert landscapes; and thus, also, the coast-lands of South America in northern Chile and Perú are rainless and barren, showing

only a skirt of yellow, sandy waste, excepting where streams descend to cross it from the heights of the Andes. Between these two extremes, where the climate graduates from that of the hot and damp equatorial region to the droughts of the western seaboard, all the central lowlands of America in the temperate zone have landscapes in which grasses are the predominant covering of the soil. There are the vast rolling prairies of the basin of the Mississippi, in North America, reaching from near the Gulf of Mexico away to the great lake region of the north; and the corresponding "pampas," or level grass-covered plains of the La Plata basin, in South America, reaching south from the tropical line, between the South Brazilian plateaus and the base of the Andes, far away south, into Patagonia. Over these, in contrast to the equable climate of the equatorial forest region, the variations of temperature between hot summer and cold winter begin to be very considerable.

Referring again to the wind chart, it is observed that the great currents of westerly winds, blowing across the Pacific, strike the coasts of the continent between British Columbia and Alaska in North America, and in Chile in South America. These winds, like the trade-winds of the Atlantic, have been moving across the wide expanse of the sea, and gathering moisture from it as they went. On meeting the opposing coasts, this store is released in copious rain showers over the land. Thus, in British Columbia and in southern Chile we come again to regions in which rain is abundant, and with this copious watering, woodland scenery again prevails. Over all that portion of North America which is reached by the moist westerly winds, from British Columbia across to Canada and Labrador, pine forests are the characteristic covering of the land. In southern Chile also the mountain sides facing the damp westerly current are clothed with forest trees.

The apex of South America lies well within the temperate zone, but North America, in the same latitudes, is still a broad continental region, which passes northward across the Arctic Circle to the shores of the icy sea. Here in the rigorous climate of the margins of the polar ocean the trees become stunted and small, and at last give place, as in Siberia, to barren mossy wastes and frozen swamps, corresponding to the "tundras" of the Asiatic border of the Siberian seas. Here, in the short summer, the surface soil thaws into mud and marsh, and clouds of mosquitoes fill the air; in winter snows cover the land, and the lakes are hard frozen for half the year, and the thermometer falls far below the zero point. Farthest north of all we reach the barren islands of the Arctic Archipelago, the rocky points showing dark above the covering of snow and the ice-covered sea round them, and the huge island of Greenland covered over all its extent, excepting a narrow fringe of its western coast, by one vast sheet of glacier ice.

7. Plants and Animals.—The polar bear haunts the arctic region of Old and New Worlds alike, and in the northern forest region, where pine and birch are the characteristic trees, the bear and other fur-yielding animals are pursued for their skins. Yet the pines, oaks, birches, and willows of the American forests are not the same as those which cover the plains and mountains of Siberia. The prairie region is the home of deer, and of the bison, called the buffalo in the United States; an interesting species of sheep, called the Bighorn, equal in size to the argali of Tibet, is indigenous to the crags of the Rocky Mountain region of the west, and the great grisly bear, the most formidable animal of the New World, is found chiefly among these mountains, and on the table-lands westward of them.

The flora of the moist tropical region of America resembles that of tropical Africa and Asia in its palms; no palm forests of such extent as those of South America exist in any other part of the world. In these woodlands the jaguar, the only very formidable beast of prey in South America, exists

the puma, has its home ; here also the great tapir, peccaries, and the sloth, anteaters, and armadillos, are found. The opossums of America were the first known of marsupial or pouched quadrupeds. Monkeys are quite as numerous in the warm parts of the New World as in those of the Old, and are of many species : there are no great apes resembling those of Africa or of the East Indies ; but it is characteristic of all the American monkeys that they have long tails, and many of them use these appendages to swing from branch to branch, a peculiarity found in none of the monkeys of the Old World.

The waters of the South American tropical region bear the splendid *Victoria regia*, the most magnificent of the water-lilies, and the forests there are bound together by "lianas" or twining creepers, so that many parts of them are impenetrable, and animals find their way between by narrow paths kept open by constant use. Up in the Cordilleras of the Andes the "chinchona" trees yield the celebrated Peruvian bark or "quinine," and farther south, on the mountain slopes, the "araucaria" is a representative of the pines. The llama and its congeners, the alpaca and vicuña, most nearly allied to the camels of the old world, inhabit the high Andes of Perú and Chile. The treeless plains or pampas of South America have in general a grassy vegetation, and there the *nandu*, or American ostrich, is seen in troops ; here also the puma, or American lion, is now most numerous, though it ranges over all the continent between Patagonia and the United States in the north. Towards the Strait of Magellan, in Chile, the forest vegetation again assumes a character more like that which we are accustomed to in Europe, and the woods are composed in great part of a peculiar species of beech. The birds of America that may be specially noted are the eagles and vultures, among which is the great *condor* of the Andes, the turkeys, the parrots of the tropical forests, the humming-birds, and the strange great-beaked toucans peculiar to the continent.

Among the numerous serpents of the continent are the great boas and the venomous rattlesnakes ; alligators abound in the rivers to beyond the tropical lines. The lakes and rivers abound in fish, of which many belong to the salmon family, and the cod-fisheries of the Banks of Newfoundland are unequalled anywhere in the world in productiveness.

Maize is the only cultivated grain of American origin ; the other useful grains, with the sugar-cane, the banana and plantain, coffee, cotton, flax, and many other plants, now widely cultivated, have been introduced into America by Europeans. Tobacco, however, is a native product of America, as are the potato, the arrow-root and tapioca, cocoa, vanilla, and pimento, or Jamaica pepper, and the yerba-maté, or tea of Paraguay. The most important mineral product of North America is its gold, which is found on both sides of the Rocky Mountain highlands on the west, and on the south-east slopes of the Alleghanies. Rich silver veins are also found in the western region of North America ; copper, iron, and lead, are also widely spread. No part of the earth appears to have greater stores of coal than eastern North America, and beside these also petroleum has been found in great abundance.

In South America the chain of the Andes is so rich in metals, silver and copper especially, that its name is supposed by some to have had its origin in the Inca word *anta*, which signifies minerals. Perhaps no country is richer in precious stones than Brazil.

8. People.—The population of the American continent is believed to amount now to about ninety-eight millions. We have noticed in the former chapters how the older inhabitants of the continent have been supplanted, especially in the northern division, by the tide of emigrants from Europe, and the African slaves they brought. At the present day the aboriginal American Indians are believed to number about fifteen millions ; they are far more

numerous in South America than in the north. It is generally believed that all the aborigines of America, from Alaska in the far north to Patagonia and Tierra del Fuego, are of one race. Their type of nature approaches more nearly to the Mongolian than to any other: moderately tall and robust in figure, their soft satin-like skin varies in colour from yellow to olive-brown or copper colour; the nose is large and often aquiline, the cheek-bones strong and projecting; the eyes small, black, and deep set, with corner turned upward towards the temple; the forehead low and broad, the hair black and coarse and straight. Along with this apparent unity of race, the most wonderful diversities of speech are found; it is said that from four to five hundred different languages are spoken by the different sections and tribes of the American Indians. In mental attributes, earnestness and bravery, the native Americans rank far higher than the Papuans and Malays of the East Indies, higher also than the African negroes; we have already seen what a high point of civilisation the Aztecs of Mexico and the Incas of Perú had reached long before any European knew of the existence of America.

If the American continent was originally peopled, and its ancient civilisation derived, from Asia, as has been supposed by some, this must have taken place at a period far more remote than that of the oldest existing culture in the Old World. The only family in America which presents any distinct resemblance to the people of Asia of the present day is that of the short, broad-shouldered seal-hunters, the Eskimos, who are spread all round the Arctic coasts of America, from the Asiatic side of Bering Strait to Greenland. These little people are decidedly Mongolian in form, with flat nose, projecting cheek-bones, oblique eyes, and brown skin, thus presenting marked contrast to the American Indians.

By far the larger proportion of the inhabitants of America at the present day, however, have either themselves crossed over the Atlantic from Europe, or are the descendants of those who have migrated thence since the date of Columbus's great discovery. We have seen in the historical chapters how the Spaniards, landing first in the West India Islands, spread their conquests across to the mainland in Mexico, down the coast of the Pacific to Perú and Chile, and by the great inlet of the La Plata over the vast Argentine plain in the south. All round these coasts Spanish blood now prevails; there also half-caste Spanish and Indian people are very numerous, and by these the true Indian natives are being pressed more and more into the heart of the continent. All round the coast-lands of Brazil the Portuguese element is dominant. In Lower Canada, and in Louisiana about the mouth of the Mississippi, people of French extraction are still the most numerous; but the stronger north European people, the British and the Germans, now hold by far the largest share of the North American continent.

9. Religion and Education.—The native American Indians were, and are, of very various habits and stages of advancement. Most are nomadic hunters; many tribes are fishers; some cultivate the soil, and live in settled habitations, and were agriculturists before the arrival of the Europeans. Their condition also ranged from that of savages up to the stage of those who built the grand Temple of the Sun at Cuzco. At present most of the Indian tribes, especially the "*Indios bravos*," or wild Indians of the South and Central American forests, remain heathens. Many, however, have been brought to a certain extent under the influence of civilisation. The majority of the inhabitants of America, however, being of European descent, are Christians. Protestantism prevails in the United States, as in all the possessions of Protestant powers; and the Protestant lands of America enjoy the most perfect religious freedom. The State does not interfere in any way with the Church, and thus hundreds of independent sects, the most remarkable of which is that of

the Mormons, are found in this part of the continent. In all South and Central America, and in Mexico, the Roman Catholic religion prevails, and there the tendency is, as far as possible, to be exclusive. In Brazil, for example, though religious bodies other than Roman Catholics are tolerated, they are not permitted to build any place of worship which resembles a church. In point of education and general advancement, as in religious freedom, the Protestant lands of America stand very far higher than the Roman Catholic; and the lands of the continent in temperate climates, both South and North, far above those in which the hot, languid, tropical climate enervates mind and body. In the United States and Canada, for example, about 86,000 miles of railway have been built, but the railway lines yet made in South America, all together, do not extend to nearly a twelfth part of that length.

10. **Government.**—The whole of America is now more or less completely under the government of European races, excepting only the negro state of the island of Haiti, and the aboriginal Araucania in the south of Chile. America is essentially the continent of Republics. European colonies, when they threw off the ties of the mother country, almost without exception formed themselves into free states. An example was first set by the United States of North America (1776), when the North European population rebelled against restriction in trade and unwelcome taxes. The name of Washington, famous in this period of American history, is preserved in the capital city of the Union. Following this the Spanish colonists, led by Simon Bolivar, also began to break the bonds which bound them to the home country (1810-25), and to form the fifteen Creole¹ Republics—Mexico, Guatemala, Honduras, San Salvador, Nicaragua, and Costa Rica, in Central America; Venezuela, Colombia, Ecuador, Perú, Bolivia, Chile, the Argentine Republic, Uruguay, and Paraguay, in South America. Portuguese Brazil alone of the South American colonies formed itself into a constitutional monarchy under a branch of the royal family of Portugal. The Canadian Dominion and Newfoundland alone remain British possessions in the mainland of North America.

GREENLAND.

1. The great island of Greenland, lying north-east of the mainland of America, just touches the Arctic Circle at its southern islet of Cape Farewell, and reaches away northward into the icy region round the Pole. Its limits in that direction have not yet been discovered, and as yet only the outlines of its rugged coasts as far as the 80th parallel have been determined. Within these outlines the known extent of Greenland is about 737,000 square miles, or more than nine times that of Great Britain. Its eastern coast, facing the open Arctic sea and the Iceland channel for a distance of about 1500 miles, is swept by the great ice-bearing Greenland current from the Polar basin, and is thus almost impossible of approach. The longer western shores, on the contrary, those next Davis Strait and Baffin Bay, facing America, have their rigorous climate softened in some degree by the influence of a warm stream from the Atlantic,

¹ The whites of Spanish descent born in America are termed *Creoles*.

which passes north towards the narrow channel of Smith Sound, rendering them habitable as far north as Baffin Bay.

2. But few regions of the earth are less adapted for habitation by man. Snow falls in every month except that of July, and the average temperature of the west coast is 10° below the freezing point. The name Greenland, indeed, is as inappropriate to this land of desolation as that of "Hvidsærk," or "White Shirt," given it by its discoverer, is apt in describing the vast ice-field which covers it over from sea to sea. This greatest of snow-fields in the world is named the "inland-ice" by the Danes; from it great glaciers flow down between the bleak mountain-walls of the innumerable fiords that indent the coast-line, to break off where they reach the sea in huge icebergs, many of which are carried by the ocean currents, or drifted by the winds, far south into the Atlantic.

3. The western coast-line from Cape Farewell northward for about a thousand miles has a few small isolated Danish colonies and settlements of Eskimo fishers scattered along its length. Here the Danes claim an extent of about 34,000 square miles of the coast lands, and their colonies are divided into Southern and Northern Inspectorates. Most of the settlements were founded by Moravian missionaries. Those in the Southern Inspectorate are Frederiksthal, the nearest to Cape Farewell; then Lichtenau and Julianeshaab, where there are the most numerous remains of the old Icelandic colonies; Frederikshaab; Lichtenfels; Godthaab, the earliest of the modern Greenland colonies (lat. $64^{\circ} 10' N.$), the residence of the Governor of South Greenland; New Herrnhut; Zukkertoppen (named from a remarkable "sugar-loaf" mountain near it); and Holsteinborg.

In the Northern Inspectorate come the settlements of Egedesminde (the "memory of Egede" the missionary); Christianshaab and Jakobshavn, on the shores of the bay formed by the island of Disco; Godhavn, on Disco Island the residence of the Governor of North Greenland; and Upernavik (lat. $72^{\circ} 50' N.$), the most northerly permanent settlement in the world. In all, the Danish colonies of Greenland have about 9500 inhabitants, of whom about 300 are Danish settlers, the rest Eskimo. Outside the Danish territory there are probably not more than 500 Eskimos, living along the coast north of Upernavik.

4. The vegetation of even the most favoured spots of the South Greenland coast is scanty in the extreme, consisting of mosses and lichens, and a few dwarf birches and willows creeping along the ground, and never reaching a greater length of stem than three or four feet. The products exported to Denmark are chiefly sealskins, whale and seal oil, eider down, and "cryolite," a mineral found near Frederikshaab, in South Greenland, from which the metal aluminium is obtained.

5. During the long winter the Greenland colonists are shut off from communication with Europe by the ice which closes the fiords; but in summer, besides the regular vessels from Denmark, the colonies are frequently touched at by the British whaling vessels. These ships, most of which belong to the Scottish ports of Dundee and Peterhead, have auxiliary steam power, and pass up along the western coast of Greenland in early summer, taking advantage of every "lane" and "lead" in the ice which then covers the sea, and keeping a constant look-out from the "crow's nest" at the mast head for the spout of the whale, till the "north water" of Baffin Bay is reached; then they cross over to the American side, and return along it southward to the Atlantic again when summer has ended.

BRITISH NORTH AMERICA.¹

1. The British dominions in North America occupy all the immense area of the northern half of the continent, excepting Greenland, and the Alaska territory which belongs to the United States. They thus reach across from the Pacific Ocean and the boundary of the Alaska territory on the west to the Atlantic ; and from the 49th parallel of latitude and the line of the St. Lawrence northward to the farthest known lands of Arctic America in the Icy Sea. British North America, then, extends over a space which is nearly as large as all Europe.

Its main divisions, which we shall take up in order, are (1) the Dominion of Canada, and (2) Newfoundland.

By an Act of Parliament which came into force in 1867, the formerly separate British provinces of *Canada*, *Nova Scotia*, and *New Brunswick*, were joined under one constitution, and assumed the title of the "Dominion of Canada." In 1869 the right of government of the vast fur-hunting grounds of Rupert's Land and of the Hudson Bay Territory was purchased from the Hudson Bay Company, and were placed under the government of the Dominion of Canada, and re-named the *North-West Territory*. The Company, however, continues its trading operations without restriction, and retains a small space round each of its stations. The Lieutenant-Governorship of *Manitoba*, in the basin of the Red River, was formed out of a small part of this territory in 1870.

In the following year *British Columbia* and *Vancouver Island*, on the Pacific slope of the continent, also joined the Dominion, and *Prince Edward Island* was added in 1873, so that the Dominion of Canada now includes the whole of the British North American possessions, excepting *Newfoundland*.

The constitution of the Dominion of Canada is similar to that

	Area in sq. miles.	Population.
1 Dominion of Canada, provinces of, Ontario	107,780	1,913,500
Quebec	193,355	1,358,500
New Brunswick	27,322	331,200
Nova Scotia	21,731	440,600
Manitoba	13,967	49,500
Prince Edward Island	2,173	107,800
British Columbia	356,000	60,000
North-West Territory	2,483,000	100,000
Newfoundland	3,205,344	4,361,100
	42,734	175,000
British North America ²	3,248,078	4,536,100

² Excepting the Bermuda Islands, the West Indian and Central American possessions.

of Great Britain. The executive power is exercised by a Governor-General appointed by the Crown, the legislative authority is a Senate, nominated by the Executive, and a House of Commons elected by the people. Each province, however, under its Lieutenant-Governor, has a separate Parliament, and administers its own internal affairs.

CANADA PROPER.

2. Canada proper, the territory ceded to Britain by France in 1763, occupies the northern watershed of the great river St. Lawrence from the shores of Lake Superior down to the Strait of Belle Isle, and also the country south of the St. Lawrence between the United States boundary marked out by the 45th parallel of latitude and by the coast of Chaleur Bay, which opens into the Gulf of St. Lawrence. Canada reaches for about 1300 miles from west to east, and embraces an area more than five times larger than that of England.

3. **Rivers and Lakes.**—Its great physical feature is its noble river, the St. Lawrence. During the greater part of the year this river is navigable for the largest vessels for nearly 600 miles up from the sea to Montreal. Above that place the channel is obstructed by falls and rapids, but the upward navigation is continued by canals, which unite Montreal with Kingston, on the wide expanse of Lake Ontario, where many steamers are busily employed in constant traffic. Another canal carries the navigation from Lake Ontario past the stupendous falls of Niagara (160 feet high) to Lake Erie; from that the channels named the Detroit and St. Clair lead up to the still grander expanses of Huron and Michigan; finally, ascending the St. Mary River, we reach Lake Superior, the greatest of all fresh-water lakes, occupying a space as large as Ireland. Along this magnificent waterway (1291 miles from Chicago to Montreal) vessels of 1500 tons now bring the grain and other produce of the Western United States for consumption in Europe. The Saguenay, the St. Maurice, and the Ottawa are the great affluents of the St. Lawrence from the north; the Richelieu, from Lake Champlain, which lies within the boundary of the United States, is the chief tributary from the southward.

4. **Climate.**—The climate of Canada passes between the extremes of great heat in summer and severe winter cold, with short intervals between these seasons. Yet the long winter has generally a cloudless sky and clear bracing air. The climate of the eastern region becomes more rigorous as it approaches the borders of Labrador, along the coasts of which the icy current from Baffin Bay flows southward; the estuary of the St. Lawrence remains blocked by ice for about five months; towards the west the climate becomes much milder, and on the shores of Lake Ontario the sledging time of winter lasts for only as many weeks as it does months on the shores of the Lower St. Lawrence; while the summer is so hot that maize ripens in the open, together with grapes, melons, nectarines, apricots, and tomatoes.

5. **Products.**—At the time of its first settlement by Europeans, Canada was covered with unbroken forests, and though much land has been cleared by the axe, the woods of pine, maple, beech, and oak still form the great natural wealth of the land. The cleared districts have an exceedingly

fertile soil, on which abundant crops of the same kinds of grain and vegetables as we have in England are raised.

Round Lake Superior the country is exceedingly rich in copper; iron, coal, lead, granite, and marble are also found in Canada; and the petroleum wells of some districts are remarkably productive. The fisheries also of the Gulf of St. Lawrence, and its neighbouring waters, are among the most valuable in the world.

6. **Divisions and People.**—Canada proper consists of two divisions, formerly called Upper and Lower Canada, which were united in government previous to 1867, when, on the formation of the "Dominion," they were disassociated, and became provinces of the new federation under the names of *Ontario* and *Quebec*.

The province of Ontario lies between Lake Superior and the Ottawa river, fronting on the Upper St. Lawrence and the Lakes Ontario, Erie, Huron, and Superior. It is the most important part of British North America, and is thickly settled on the south, along the river and the lake shores, by a population which is mainly of British descent, with a considerable infusion of Germans and Dutch. The northern and north-western parts are still forest-covered.

The province of Quebec occupies both sides of the St. Lawrence from the Ottawa river to the Gulf of St. Lawrence. The river valley itself is very fertile, but the country north-east of the Saguenay is almost incapable of cultivation from the severity of the climate there. The inhabitants of this province are in great part descendants of the original French settlers; they are called *habitans*; many of them speak a corrupt French dialect and keep up peculiar manners and customs, and they are Roman Catholics in religion. Besides these there remain a few Indians—Chippeways, Mohawks, or Iroquois—some of them settled in the villages, others still nomadic hunters.

7. **Industries.**—The chief industries of Canada are those of agriculture, stock-raising and dairy-farming, "lumbering" or timber trade and forestry, shipbuilding, fisheries, and mining. An extensive trade is maintained with the United States and England, the exports being timber, fish, and furs, with dairy produce and live stock; meat also is now brought in quantities to England. When the St. Lawrence is closed in winter, the outlet of trade is by railway from Montreal to Portland in the State of Maine.

8. **Chief Towns.**—The capital and seat of government of the Canadian Dominion is at *Ottawa*, on the right bank of the river of that name, 87 miles above its confluence with the St. Lawrence, and close to where the river rushes over the splendid cataract called the Chaudière Falls. *Montreal*, however, is the largest city of Canada (141,000). It has extensive trade and manufactures, and from it the magnificent Victoria tubular bridge carries the Grand Trunk Railway of Canada across the St. Lawrence, which is here two miles wide. *Quebec*, the capital of the lower province, is the great shipping place for the Lower St. Lawrence, and is a picturesque old town, with walls and fortifications. Near it are the memorable Plains of Abraham. *Toronto*, on the north-west shore of Lake Ontario, is the local capital of the western provinces and the educational centre of the Dominion, possessing a university and numerous schools. *Three Rivers* is a flourishing town at the mouth of the St. Maurice, about midway between Montreal and Quebec.

NEW BRUNSWICK.

9. The province of New Brunswick, a territory about half the extent of England, lies between the province of Quebec and the

State of Maine, and has an eastern coast-line to the Gulf of St. Lawrence and a southern to the Bay of Fundy, which runs in from the Atlantic to form the peninsula of Nova Scotia.

10. Its highlands and valleys are more completely covered with forest than any other part of British America. Its most considerable rivers are the St. John, which enters from the northern part of the State of Maine and flows south to the Bay of Fundy; and the Ristigouche, which forms the boundary between Quebec and New Brunswick, flowing east to Chaleur Bay. The climate is a rigorous one, like that of Quebec.

11. The people of New Brunswick are partly Acadians, or descendants of old French settlers, Anglo-Americans, and British, besides a few remaining Indians. Lumbering, farming, fishing, and shipbuilding are the characteristic industries here, as in Eastern Canada. *Fredericton*, on the St. John River, is the seat of local government of the province and the university town; but St. John, at the mouth of the river, is the commercial capital.

NOVA SCOTIA.

12. The peninsula of *Nova Scotia*, nearly severed from New Brunswick by the Bay of Fundy, and *Cape Breton Island*, separated from the latter on its north side by the narrow Gut of Canso, form another province of the Dominion. They may be compared in joint area to Scotland south of the line of the Forth and Clyde, and have, like it, a much broken coast-line; the island of Cape Breton especially being nearly divided by the long Gulf of Bras d'Or.

13. The province is a most important one, especially on account of its mineral wealth; both divisions of it have extensive coal mines; iron and gypsum are also very abundant. Coming within the influence of the warm Gulf Stream, the climate of Nova Scotia is milder and more equable than that of the inland provinces. Its cod, mackerel, and salmon fisheries rank next in value to those of Newfoundland.

14. The people are of various origin, French, English, Irish, Scotch, and Anglo-American, there being also a few Indians and negroes, the descendants of escaped slaves.

The capital, *Halifax*, on the south-east or Atlantic coast of Nova Scotia, possesses a splendid harbour, and is the chief British naval station in North America. It carries on a large business also in coal and shipbuilding. Sydney, the chief place in Cape Breton Island, has also a good harbour.

15. The *Magdalen Islands*, a small group near the centre of the Gulf of St. Lawrence, are inhabited by about 2000 fishers. *Sable Island*, 90 miles out in the Atlantic from the coast of Nova Scotia, is formed of sand-hills, and rises on a dangerous bank, which has been the scene of many shipwrecks.

PRINCE EDWARD ISLAND.

16. This island, which is about the same size as our English county of Norfolk, lies in the wide southern bay of the Gulf of St. Lawrence, and is separated from New Brunswick and Nova Scotia by Northumberland Strait.

It was formerly called St. John, but its name was changed in honour of Edward, Duke of Kent, who was commander-in-chief of the British forces in America at the end of the eighteenth century.

17. Its coasts present cliffs of red sandstone, and are deeply indented. Large portions of its surface have been cleared of their original forests, and its fertile soil yields far more grain and vegetables than its inhabitants require. Its fisheries are also very profitable. People of Scotch descent are most numerous. *Charlotte Town*, its little capital, is a busy trading place.

NORTH-WEST TERRITORY.

18. By this name is now understood all the vast region of North America through which the trading stations of the Hudson Bay Company are scattered. It extends from the boundary of the United States away north to the Arctic Ocean, and from the inner watershed of Labrador westward to the heights of the Rocky Mountains, and its area is nearly thirty times that of Great Britain.

19. The greater part of this huge territory is occupied by prairies and interminable forests, which reach away north to the limit of tree-growth, when the landscape changes to that of a monotonous stony or mossy waste of frozen soil, resembling that of the Siberian Tundras. This arctic belt is named the "Barren Grounds," in contrast to the more southerly region, where fur-bearing animals—foxes, wolves, beavers, bears, and otters—moose and rein-deer, besides an immense variety of wild fowl, are found in the forests and prairies.

20. The North-west Territory is also eminently characterised by great rivers and lakes and swamps. Its greatest river is the *Mackenzie*, whose chief tributaries, the Athabasca, Peace, and Liard, flow down to it from the Rocky Mountains. Its channel also expands in the great lakes of Athabasca, the Great Slave and Great Bear Lakes. The Mackenzie and its lakes are closed by ice for more than half the year (October till June). The *Back* or Great Fish River drains the north-eastern country to the Arctic Ocean, but almost the whole of the southern region, formerly known as Rupert's Land (a name given in honour of Prince Rupert, one of the founders of the Company in 1670), lies in the basins of the rivers which fall into Hudson Bay. Largest of these is the *Nelson*, the head streams of which are the Saskatchewan rivers, which flow down from the Rocky Mountains to form Lake Winnipeg, from which the Nelson issues.

The *Churchill* is also an important river of the Hudson Bay drainage, carrying to it the surplus waters of the Woolaston and Deer Lakes. These great rivers and lakes, with their many tributaries, form a network of high-ways throughout this vast territory, and long journeys are accomplished by their means by the traders, who carry their bark canoes from one stream to another by the "portages" at the points where they approach one another most closely.

21. The thinly-scattered population of the north-west territory consists of the European servants of the Fur Company, of half-breeds, and of Indians belonging to a multitude of small tribes, those of the Chippeways, Blackfeet, and Crees being the most considerable. The Company has upwards of a hundred stations or "forts" dotted over the wide region, and used as depots for collecting the furs trapped in its neighbourhood. The most important of these is *Fort York*, on a marshy site near the west coast of Hudson Bay, surrounded with forests of stunted pine. The Company's ships reach this place

from England in August, when the sea is free of ice, bringing stores and provisions for the forts, and they load with furs, and leave again for home in September, when the ice begins to close the bay again. The construction of the Canadian Pacific Railway, now rapidly approaching completion, and the agricultural advantages held out by the fertile belt, have recently attracted numerous European settlers. The capital of the territory is *Battleford* on the Saskatchewan.

MANITOBA.

22. This small province (about a third of the size of England) was formerly known as the Red River Settlement, a colony which was begun in 1811. It is a section of the southern fertile belt of the North-west Territory immediately adjoining the boundary of the United States, and includes part of the lower basin of the Assiniboine and of the Red River, which flows from the United States northward to Lake Winnipeg. It is a prairie country with a rich soil, and its pastures are admirably adapted for sheep and cattle rearing, which are its chief industries. The severe winter season, however, lasts for five months.

23. Its seat of government is at Winnipeg (*Fort Garry*), near the confluence of the Red River and the Assiniboine, and the Lieutenant-Governor of Manitoba has also charge of the North-west Territory. The early settlers of the Red River Settlement were from the Scottish Highlands, who were afterwards joined by Canadians and half-breed hunters from the North-west Territory and Canada. The greater part of the population at the present day is half-breed and Indian. That section of the Canadian Pacific Railway which extends from Lake Superior to Manitoba now being nearly completed, will no doubt lead to a considerable inflow of settlers.

BRITISH COLUMBIA.

24. Until the year 1858 all the western region of the present Canadian Dominion, extending from the crest of the Rocky Mountains over the high ranges and plateaus down to the Pacific coast, and from the frontiers of the United States in 49° to latitude 60° N., including also the large island surveyed in 1762 by Captain Vancouver, was held by the Hudson Bay Company under lease from the British Crown. In that year the two colonies of British Columbia, or the mainland region, and of Vancouver Island were formed. These two were amalgamated into one colony in 1867, and, as we have seen, the colony of British Columbia and Vancouver joined the Canadian Dominion in 1871.

25. British Columbia is a region of great extent, nearly as large as France. Most of it lies on the high broken plateau that stretches between the Rocky Mountains and the Cascade and Coast ranges. The coast-line is indented with deep "fiords," like those of Norway, and the interior is traversed by the deep ravines in which the *Fraser* river and its tributary the *Thompson*, as well as the *Skeena* or *Simpson* and *Stikine* rivers, find their way down to the Western Ocean. Its mountain ranges and slopes are covered with pine forest, affording magnificent timber; between the ranges on the plateau there are wide grassy

prairies. The climate, though milder than that of Canada in the lower valleys, is severe in the higher levels; frost and snow reign there for half the year, and the summer climate is very variable.

Vancouver Island is about 300 miles long, and is formed by a high pine-covered mountain ridge descending by the walls of fiords and inlets to the rocky coast. The group called the Queen Charlotte Islands also belongs to the province.

26. The colony owes its importance mainly to the discovery of gold along the banks of the Fraser river, and to the extensive coal mines of Vancouver Island. Its population, however, is still very small; there are only about 10,500 Europeans; the majority consists of aboriginal Indians (32,000) in a number of tribes, the Selish and Loucheux being the largest.

Victoria, on the south-east coast of Vancouver Island, is the chief town of the colony, and the seaport of the island. *New Westminster*, on the Fraser river, about fifteen miles from its mouth, is the most considerable place on the mainland. The Fraser is navigable to this point for large vessels, and smaller river steamers can pass upward for 158 miles to *Fort Hope*.

NEWFOUNDLAND.

27. The island of Newfoundland forms a British province, distinct as yet from the Dominion of Canada, and its government extends over the mainland coast strip of Labrador.

Newfoundland, so named from its having been re-discovered by Cabot in 1497, is separated from the mainland of Labrador by the difficult passage called the Strait of Belle-Isle, which is only ten miles wide at its narrowest point. It encloses the Gulf of St. Lawrence on the east, and its remaining coasts are washed by the Atlantic. Its area is about a fourth larger than that of Scotland, and, like that country, its coasts have many deep bays and inlets.

28. Its surface is covered with lakes and ponds, rounded hills called "tolls," swamps, bare mossy tracts, and woods of pine and birch; and its climate is rigorous and severe, especially along the north and east coasts, owing to the quantity of ice which is brought down by the Labrador current from the Greenland seas, and the dense fogs which rise when the cold current meets the warm Gulf Stream from the south. In the interior, however, the climate is more favourable to agriculture, and the fertile valley of the Grand River affords accommodation for a hundred thousand settlers.

29. The cod-fisheries on the vast submarine bank, 400 miles long, which extends south-east from the island, are the greatest and most important in the world. They constitute the wealth and give employment to almost all the inhabitants, who live for the most part along the south-east coast. *St. John's*, on the coast of the south-eastern peninsula, is the capital, the port and commercial town of the island. The British Atlantic telegraph cable touches American land first at "Heart's Content" in Trinity Bay, one of the inlets which divides off the south-eastern peninsula, and is carried across the south of the island to Placentia Bay, and thence across the Gulf of St. Lawrence to the mainland.

30. The Labrador coast is one of the most desolate regions of the world, but affords good harbours, so that the valuable seal, whale, and salmon and herring fisheries of its seas can be busily prosecuted in the summer months. The few permanent stations on its rocky coast are occupied by people who,

when they are not occupied in the fishery, employ themselves in the capture of fur animals during the long winter. The greater part of the permanent inhabitants are Eskimos, among whom the Moravians keep up the mission settlements of Hopedale, Zoar, Nain, Okak, Hebron, and Ramah.

31. The island of *Anticosti* (a political dependency of Quebec) has no inhabitants save the keepers of its lighthouse, for its 3150 square miles of surface present only rocky hills and swamps. Off the south coast of Newfoundland the islets of *St. Pierre* and *Miquelon-Langlade* belong to France, and are well peopled by fishers.

32. The arctic coasts of America, and the archipelago of islands which extends beyond closely packed round by thick ice-floes that fill the straits and channels between them, are of no value or interest excepting that each point along their shores has been the scene of the hardest exploits of the voyagers who discovered them during the long-continued attempts to find a navigable north-west passage to the Pacific. The sole human inhabitants of the southern parts of this dreary region are a few wandering families of Eskimo, who live in huts of snow-blocks, travel about in sledges drawn by dogs, live on the flesh of the seal, and clothe themselves with its skin.

ALASKA.

1. The great promontory of western Arctic America nearest Asia, marked off by the 141st meridian of west longitude, as well as a part of the coast-land extending southward along the Pacific to about the parallel of 54° N., with its dependent islands, was formerly the hunting-ground of a Russian fur company. In 1867, however, this great region, which extends over an area about ten times as large as England, was sold to the United States, and has since been known as the Alaska Territory.

2. It is for the most part a forest country, excepting along the bare frozen lands next the Arctic Sea, and is valuable chiefly for its fur animals and for the sea-otters of its coasts. The great river *Yukon*, rising in the mountains of the north part of British Columbia, passes through the midst of it.

3. Its inhabitants include only about 300 whites (Americans and Russians), most of whom live in the settlement of *Sitka* or New Archangel, on the west coast of the island of Baranov, one of the southern coast group. Inuit or Eskimo, Aleutian Islanders and American Indians, form the rest of the scanty population.

4. The long chain of the *Aleutian* Islands extends the line of the Alaska peninsula round the south of Bering Sea towards the coast of Kamtchatka. These islands are about sixty in number, and are all of volcanic formation, craggy and desolate, their rigorous climate forbidding the growth of any larger vegetation than stunted bushes, grass, and lichens. Reindeer and foxes are plentiful, however, and the seas round them abound in seals, sea-otters, and fish. Their inhabitants, who are very few in numbers, are of Kamtchatkian origin. The largest islands are Unalashka, Umnak, Atcha, and Atta, the last being nearest to Asia.

UNITED STATES.¹

1. **Extent.**—The republic of the United States is by far the most populous, wealthy, and progressive country of all the New World. It occupies the most valuable portion of the North American continent, the whole of it (with the exception of the territory of Alaska) lying within the temperate zone, between Canada on the north and Mexico on the south, and reaching across from the Atlantic to the Pacific Ocean. Its boundary towards the Canadian Dominion passes through the Haro or northern channel of the Strait of San Juan de Fuca, south of Vancouver Island, and thence along the 49th parallel of latitude to Lake Superior; then midway through the centre of the great lakes to the St. Lawrence, and down that river to the 45th parallel, and an irregular boundary which separates New Brunswick from the States of New York and Maine, terminating at Passamaquoddy Bay. In the south the Mexican frontier runs from the Pacific coast, northward of the peninsula of California, to the Rio Grande del Norte, which it follows to the Gulf of Mexico. From Atlantic to Pacific, the breadth of the United States is not less than 2500 miles; and from north to south the country extends through 24 degrees of latitude, or nearly 1700 miles. Its area may be best compared with that of Europe itself, or to fifty times that of England and Wales.

2. **Physical Features.**—The surface of the United States naturally divides itself into four great regions—viz. the Atlantic highland and plain in the east, the central Mississippi valley, the western highland, and the Pacific slope.

3. (1.) The Atlantic section includes the curving ridges of the *Alleghany Mountains*, which extend from the St. Lawrence south-westward towards the Gulf of Mexico. Their highest point is in the seaward ridge called the Blue Mountains, near the centre of the length of the chain. Black Dome Mountain, the summit, is 6707 feet high. The gradual slope from the Alleghanies to the sea is named the Atlantic plain; it varies in width from being a mere strip of coast in the north to a breadth of 300 miles in the south. The drainage of this division is mainly into the Atlantic Ocean, its most important rivers being the *Hudson*, which reaches the sea at New York; the *Delaware*, flowing into the bay of its name past Philadelphia; the *Susquehanna* and *Potomac*, entering the spacious inlet of Chesapeake Bay; the *Roanoke*, *Cape Fear River*, *Santee*, *Savannah*, and *Altamaha*.

Though wholly in the temperate zone, this section has a variety of climate, colder on the north and warmer towards the south; its winters colder than those of the Pacific slopes of the continent in the same latitudes. Its natural

	Area in sq. miles.	Population.
1 United States, main division (1880)	3,002,852	50,300,000
Alaska territory	577,390	27,500
	<u>3,580,242</u>	<u>50,327,500</u>

resources and wealth lie mainly in its mines of iron and coal, in its timber-yielding woods, its fertile soil, its navigable rivers, water power, and generally advantageous situation for commerce. It has thus become the seat of the greatest manufacturing industry of the States, and is likewise busy in agriculture and commerce.

4. (2.) The central region is an immense valley or basin, reaching from the long western slope of the Alleghanies across to the eastern base of the Rocky Mountains, and occupying fully half the area of the United States. In general it has a gradual slope from the "Height of Land," along the northern boundary of the States next the British Possessions, to where it merges in the low shores of the Gulf of Mexico in the south. Much of it is undulating and some parts are hilly, especially where the Washita and Ozark hills run out eastward from the western highland towards the Mississippi.

The *Mississippi-Missouri*, one of the greatest rivers in the world, drains this broad central basin southward to the Gulf of Mexico. The main tributary, the *Missouri*, rises in, and receives its tributaries from, the Rocky Mountains, and has a course of nearly 3000 miles before it joins the Mississippi. The latter more voluminous river has a shorter course from a cluster of small lakes not far west of Lake Superior. The great affluent of the united river from the east is the *Ohio*; and from the west the *Arkansas* and *Red River* are the largest of those which flow to it from the Rocky Mountain slope. The Mississippi itself is navigable for 1200 miles upward from the sea to the Falls of St. Anthony in 45° N., but each of its main tributaries also affords a waterway for commerce. Several large rivers also find their way south independently to the Gulf of Mexico. The most important of these are the *Appalachicola* and *Mobile*, east of the Mississippi; and the *Brazos* and *Colorado*, with the boundary river, the *Rio Grande del Norte*, westward of it. The climate of the northern portions of the Mississippi basin is excessive—the summers being hot and sultry, the winters cold with heavy snows; but towards the Gulf of Mexico the climate becomes semi-tropical, and the winters mild and pleasant.

Rich natural prairie land is characteristic of all the central basin of the Mississippi, so that its great industry, now that it has been occupied by civilised men, is that of agriculture. In the north wheat and maize are the chief crops; in the southern region, cotton, tobacco, and sugar are the characteristic products of the lowlands, indeed this is the greatest cotton-growing region in the world. The northern region is also to some extent forest-covered, and it is rich in valuable minerals, so that here, as in the Atlantic slope, manufactures are rapidly extending.

Towards the base of the Rocky Mountains, in the west, a belt of dry country, deficient in rainfall, is reached. Much of it in the spaces between the rivers is sterile, and the southern portion of it has been named the "American Desert."

5. (3.) The western highland includes the grand range of the *Rocky Mountains* and the *Sierra Nevada* and *Cascade* chain, with the broad plateau region which extends between them.

The Rocky Mountains form the great water-parting of the United States. Towards the east, as we have seen, they send off great tributaries to the Mississippi. Towards the west the two great rivers which descend to the Pacific from these heights are the Oregon or *Columbia*, on the north, flowing across the plateau and down through the Cascade range with rapid current; and the *Colorado*, which has cut for itself a most remarkable "cañon," or narrow gorge in the plateau, through which it rushes, several thousand feet beneath the general level of the country, to the head of the Gulf of California.

These two rivers thus mark out a northern and a southern basin in the

plateau region of the western highland : a third division between these two is known as the "*Great Basin of Utah*," and has the Great Salt Lake for its central point. All this highland region within the enclosing mountains is characterised by drought and sterility, so that the most of it is valueless for agriculture ; but, as if in compensation for this, it is exceedingly rich in mines of silver and gold, so that mining is the great occupation of its inhabitants.

6. (4.) The Pacific slope descends to the ocean from the crests of the Sierra Nevada and Cascade ranges over the lower elevations and coast hills, which enclose between them the great valley of California, with its port of San Francisco, and the valleys of Oregon. The slope averages 150 miles in width. Vast forests cover the outer slopes of the mountains ; the great Wellingtonia pines of the Sierra Nevada are the hugest trees in the world. Gold, silver, and quicksilver are abundant in California, and the rich soil of the coast valley yields heavy crops of grain and vegetables. There mining, agriculture, and forestry are the leading industries of this division, with the outward commerce that rises from these, and which is facilitated by the neighbourhood of the sea.

The climate here differs from that of the corresponding Atlantic slope in being generally milder and in being divided into two seasons, the rainy winter and the dry summer.

7. *People*.—We have sketched the early history of the United States in a former chapter, and have shown how its Atlantic borders were peopled by settlers from almost every country of Western Europe. It was not, however, till after peace had been established between England and the independent States in 1815 that immigration to this part of America began to flow on a great scale. The famines of the following years gave the first impulse to immigration from Germany, and from that time onward an uninterrupted stream of population has kept on flowing into the United States. The numbers of emigrants from all parts of Europe in the ten years previous to 1830 was 150,000 : in the ten years between 1860 and 1870 the numbers had risen to nearly $4\frac{1}{2}$ millions. Though the population thus increased mainly by additions from many nations, the greater number of the earlier colonists and a great part of those who arrived later were British, so that the English language and English customs became those of the new country. Perhaps mainly through the influence of climate, however, an American type of men has been developed in the United States from the European stock, possessing characteristics of feature and mode of thought which enable it to be clearly distinguished from the British. We have also already touched upon the history of African slavery in the United States, as well as of those events which led to its abolition throughout the country, and to the amendment of the original constitution, by which all former slaves were admitted to the privileges of citizenship. Out of the whole population in 1870, $33\frac{1}{2}$ millions were white men and nearly 5 millions "men of colour," or people of African origin. The Indian aborigines within the limits of the States had at that date been reduced to 384,000, and all the remnants of their tribes are now completely under the control of the government of the United States. Though the numbers of these Indian aborigines have been very greatly diminished by the long-continued conflicts with the ever-advancing tide of white men, it is to be remembered that even at the time of the discovery of the northern portion of the continent they were by no means a numerous race. In recent years there has been a very considerable immigration of Chinese to the Pacific slope of the United States. In 1875 their numbers had reached 148,000.

8. *Religion and Education*.—As the constitution of the United States grants perfect equality to all creeds and religions, nearly all the sects and denominations existing in Europe are represented ; the most numerous bodies, however, are those of the dissenters from the Church of England, the Method-

ists, Baptists, and Congregationalists. Education is general, and every effort is made by Government to promote it; yet, owing to the recent existence of slavery, and the constant influx of numbers of uneducated emigrants, a large proportion of people ignorant of the first rudiments of knowledge still exists. There are 130 colleges for training in general knowledge or particular professions, the oldest of all being the Harvard University of Cambridge in Massachusetts, which dates from the year 1636.

9. Government.—By the constitution of the Republic of the United States the government of the nation is entrusted to three separate authorities; the executive power, vested in a President elected for a period of four years, aided in his administration by a Cabinet of ministers; the legislative, resting in a Congress, consisting of a Senate and House of Representatives; and the judicial, the supreme court, for the administration of civil and criminal law, holding annual session at Washington.

In 1873 the territory of the United States was divided for military purposes into eleven departments, but the standing army is limited to 25,000, and is scattered in small detachments over the country, but chiefly round the districts inhabited by the aboriginal Indians. The naval force includes 24 ironclads, and the navy yards lie along the Atlantic coast.

10. Division.—The political division of the country is into 38 *States*, 8 organised *Territories*, and an Indian Territory; the *District of Columbia*, which surrounds the capital city of *Washington*, and the separate Territory of *Alaska*. Each of the States has a separate constitution, which is of the same form in all of them, a governor and senate administering their internal affairs. Each returns two senators and a number of representatives to the Congress of the Union proportioned to the population at the latest census. The organised Territories are those portions of the far western region which have not yet advanced to the grade of States; they are represented in Congress, however, by one delegate from each. The immense extent of land within the boundary of the United States which is not yet inhabited or cultivated is held to be national property, at the disposal of the Congress; this public domain is surveyed and divided for the purposes of sale into "townships" of six miles square, which are again subdivided into "sections."

These States and Territories may be more conveniently classified according to their geographical position into four groups, corresponding to the four natural divisions of the country previously described—viz. the Atlantic States, the Central States, the States and Territories of the western highland, and the States and Territories of the Pacific coast.

11. (1.) *The Atlantic States.*—This group may be conveniently divided into three sections, as follows:—

- | | | |
|--------------------------------------|---|--|
| A. THE NEW ENGLAND STATES | { | Maine.
New Hampshire.
Vermont.
Massachusetts.
Rhode Island.
Connecticut. |
| B. THE MIDDLE ATLANTIC STATES | { | New York.
New Jersey.
Pennsylvania.
Maryland.
Delaware.
(District of Columbia.) |

C. THE SOUTH ATLANTIC STATES

{	Virginia.
	West Virginia.
	North Carolina.
	South Carolina.
	Georgia.
	Florida.

12. Some physical features are common to the whole group of the Atlantic States. Nearly throughout its extent we find first a level sandy plain, extending from the seaboard into the interior; then farther inland a rolling hilly belt called the middle region, which in turn rises into the long ridges of the Alleghany system of mountains. There are, however, marked differences between the divisions of the group. In the first place, the great difference of latitude between the extremities of the group north and south introduces a wide variation of climate. The northern division, or that of the New England States, belongs to the colder part of the temperate zone, the southern to its warmer belt. The ice formed during the hard winter in Maine and its surrounding States is very acceptable in the warm winterless southern States of Carolina and Florida; cotton, rice, and oranges, which will not grow in the New England States, flourish in the southern division. In the New England division the forests and the rapid streams, giving abundant water-power, have made "lumbering" and shipbuilding the characteristic industries of that section; the coal and iron of the Middle States again, and their easy communication through fine harbours on the Atlantic, and by river and canal and railway with the western interior, have rendered mining, manufacturing, and commerce the great occupation of that division; while the warm climate and wide coast plains of the southern division give it pre-eminence for agriculture, so that the cultivation of cotton, tobacco, and rice has become its distinctive industry.

13. The Atlantic States, being the oldest settled and most densely peopled region of the country, include the greater number of the large cities of the United States. *Boston*, on Massachusetts Bay, named in honour of some of the Pilgrim Fathers, who came from Boston in Lincolnshire, is the great city of the New England division. It ranks second in foreign commerce, and is specially distinguished as the literary metropolis, and for its great public libraries and schools. The manufacturing town of *Providence*, in the State of Rhode Island, is the second place in importance in the New England division.

The Middle Atlantic States, however, are those in which commerce and manufactures have raised the greatest centres of population. Foremost of these is *New York*, the great business emporium of the New World, second only in commercial importance to London. It lies at the mouth of the Hudson, on the narrow island of Manhattan. Round its magnificent harbour of New York Bay, enclosed between Long and Staten Islands, the suburbs of *Brooklyn*, *Jersey City*, and *Hoboken* have risen into great cities. Two-thirds of the imports brought into the United States enter here. Broadway, in New York, is a grand street of miles in length, lined with great hotels and splendid buildings of marble and iron; and the Central Park is one of the finest of pleasure-gardens. *Philadelphia*, on the Delaware River in Pennsylvania, comes next to New York in population, and its manufactures exceed those of any other town of the United States in value. *Baltimore*, in Maryland, on Chesapeake Bay, is a great commercial city and seaport. The small district of Columbia, on the Potomac River, enclosed within the State of Maryland, is a political territory surrounding the city of Washington, the capital of the

United States, where the public buildings are situated in which all the public business of the government—legislative, executive, and judicial—is conducted. Besides these four great centres of population in the Middle Atlantic States, we may note the manufacturing town of *Newark*, in New Jersey; *Pittsburgh* and *Alleghany*, the centres of the coal-mining region of Pennsylvania, with the most extensive ironworks, foundries, and glassworks in the United States; *Buffalo*, on Lake Erie, in New York State, where the great canal from the lake to the Hudson River begins; *Albany*, also in the State of New York, at the head of the navigation of the Hudson River, where the canal to Lake Erie terminates; and *Rochester*, in the same state, possessing the most extensive fruit and ornamental tree nurseries in the world.

The Southern Atlantic States, being more purely agricultural, have few very large towns. Of these *Richmond*, in Virginia, at the head of the tide-water of the James River, is the most important, containing extensive tobacco factories and warehouses. *Charleston*, on the coast of South Carolina, is the chief port of this division.

14. (2.) The *Central Group* of States naturally falls into two divisions; that of the North Central States, and that of the South Central or Gulf States, as follows:—

	{	Kentucky.
		Ohio.
		Indiana.
		Michigan.
NORTH CENTRAL STATES	{	Illinois.
		Wisconsin.
		Missouri.
		Iowa.
		Minnesota.
	{	Alabama.
		Mississippi.
SOUTH CENTRAL STATES	{	Louisiana.
		Arkansas.
		Tennessee.

15. The whole region embraced by this group of States has the general character of level or undulating land, at no very considerable elevation above the sea, except where it approaches the Alleghany mountain system, and forms a wide plateau of moderate elevation. The northern division is rich in natural advantages of fertile soil, great deposits of valuable minerals, extensive forests, and ready means of communication, either by the great lakes which form their boundary on the north, or by the vast rivers Mississippi and Ohio and their great affluents. Agriculture and grazing, manufacturing, mining, and lumbering are thus widely-spread industries of the North Central States, and they export enormous quantities of wheat, flour, pork, and bacon, beef, cheese, salt, wool, copper, and timber. In the southern division the warmer and moister climate and the extreme fertility of the soil render it admirably adapted for the growth of cotton, rice, and sugar-cane, so that the cultivation of these staples has become characteristic of the Gulf States. Mining and manufacturing, though of secondary importance, are also being developed.

16. The three great towns of the North Central States are those of *St. Louis*

on the Mississippi, a little south of the confluence of the Missouri; *Chicago* in Illinois, on the shore of Lake Michigan, a city whose rapid growth in population and commercial importance is unparalleled; and *Cincinnati*, a great and prosperous commercial city on the Ohio.

Louisville in Kentucky, *Cleveland* on Lake Erie in the State of Ohio, *Milwaukee* a great wheat market in Wisconsin, and *Detroit* in Michigan, with the best harbour of any on the great lakes, are other places of importance in this division.

The metropolis of the Gulf States is *New Orleans* in Louisiana, on the left bank of the Mississippi, near its mouth. It is the greatest cotton market in all the world.

17. (3.) The third group embraces the States and Territories which extend from the plains west of the Mississippi across the Rocky Mountains to the plateau lands beyond. They may be divided, according to natural features, as follows:—

THE STATES AND TERRITORIES OF THE PLAINS.	{	Texas.
	{	Indian Territory.
	{	Kansas.
	{	Nebraska.
THE STATES AND TERRITORIES OF THE ROCKY MOUNTAIN REGION.	{	Dakota Territory.
	{	Colorado.
	{	New Mexico Territory.
	{	Wyoming "
	{	Montana "

18. The region embraced by the States lying along the plains at the eastern base of the Rocky Mountains may be described generally as undulating, treeless, and grass-covered, sloping very gradually from the mountains towards the basin of the Mississippi. These enormous grass plains afford rich pasturage, so that cattle-grazing is the leading industry. Texas especially possesses immense wealth of cattle and horses. The Rocky Mountain region, rising high above sea-level, has a cool and remarkably dry climate; its valleys also afford fine pastures; but the rich mines of gold, silver, copper, lead, and coal in the mountains themselves make mining the great occupation of this division. The scenery of this mountain region, its giant peaks and deep gorges, is perhaps the finest in the world. In the basin of the Yellowstone, an upper tributary of the Missouri, so many natural wonders are presented, that a section of the mountain region has been set apart by the Congress of the United States in perpetuity as a "national park." Within its inclosure are innumerable boiling springs and geysers, many grand waterfalls, deep cañons or gorges, beautiful lakes, and high mountain peaks.

19. (4.) The fourth group of States and Territories embraces the region which extends from the west of the Rocky Mountains to the shores of the Pacific.

PACIFIC STATES AND TERRITORIES.	{ California.	
	{ Nevada.	
	{ Oregon.	
	{ Washington Territory.	
	{ Idaho	”
	{ Utah	”
	{ Arizona	”

20. The greater part of this group occupies the broad high plateau at an elevation of from 4000 to 8000 feet above the sea, which is supported between the Rocky Mountain ranges and the Sierra Nevada and Cascade Mountains along the Pacific side. It has two strongly-contrasted natural divisions: that of the dry, almost rainless, plateau lands, most of which present an aspect of complete barrenness or desert covered with sage-brush; and of the well-watered Pacific slope with its forest-covered hills. The region is, perhaps, the richest in metals of any in the globe, abounding in gold, silver, quicksilver, coal, and many other valuable minerals. The forests of the outer mountain slopes afford inexhaustible supplies of timber. The most wealthy and populous of the States of this region is that of California, for it has not only immense mineral wealth, but the fertile soil of its valleys is most favourable to agriculture, and to the production of grains and fruits both of the temperate and semi-tropical zones, while its sea front and fine harbours give easy outlet for its products and command of the traffic across the Pacific. Its chief city and seaport of *San Francisco* is the commercial emporium of the whole western coast of North America, as well as the chief manufacturing city of the Pacific coast. It carries on a very large trade with China and Japan, India, Australia, the Sandwich Isles, and other parts of the Pacific.

MEXICO.¹

1. Mexico includes the south-western portion of North America, where the continent is narrowed between the gulf that reaches in from the Atlantic, and the opposite shores of the Pacific. On the north its frontier along the Rio Grande and across to the head of the peninsula of California is conterminous with that of the United States; in the south its boundary touches the State of Guatemala in the Central American isthmus. Mexico possesses an extent of territory which is more than eight times larger than Great Britain.

2. Relief.—The form of the country is given by the great mountain ranges of the western side of North America, the prolongations southward of the chains of the Sierra Nevada and Rocky Mountains. These ranges approach one another in Mexico, supporting between them a huge wedge-shaped mass of heights and plateaus, which may well be compared with the highland of Abyssinia in Africa. Mexico has thus a rapid slope both to the Pacific and to the Atlantic, and the interior of the country lies at elevations of from 4000 to 8000 feet above the level of the sea. Towards the south a band of colossal volcanic peaks extends diagonally across it. The mountains named Orizaba,

	Area.	Population.
1 Mexico	742,000	9,400,000

Citlatpetl, Iztacchiuatl, and Popocatepetl, with the remarkable dome of Jorullo, formed by an eruption in 1759, and the cones of Colima and Ceboruco, being the chief summits.

3. *Rivers*.—From their rapid fall the rivers of such a mountainous region could never be of value for transport or communication. The *Rio Grande*, the boundary river, is only navigable for 60 miles up from the Gulf of Mexico, and the largest interior river—the *Santiago*, flowing west to the Pacific—is barred across by many waterfalls, though its upper course expands to form *Lake Chapala*, the largest sheet of water in Mexico, fully 50 miles in length.

4. *Climate and Landscape*.—The Tropic of Cancer passes centrally through Mexico, so that it lies just on the border of the torrid zone. The climate, however, is governed to a far greater extent by elevation than by position in latitude, and distinct climates are recognised at different stages, just as in the plateau of Abyssinia. The low coast-land and the maritime region below an elevation of 2000 feet, called the *Tierra Caliente*, presents all the characteristics of tropical lands, and there the indigo, cotton, sugarcane, bananas, and other fruits of the equatorial zone are found. The decay of the rank vegetation along the low coasts here produces the malaria that gives rise to the dangerous yellow fever, which is the scourge of these shores in summer. Above an elevation of 2000 feet, and up the slopes of the mountains to a height of about 5000 feet, a climate is found in which the landscape takes the aspect of that of the temperate zone, and oaks and cypresses become the characteristic trees, and maize and the cereals known in Europe are cultivated. This stage is known as the *Tierra Templada*. Here the deadly fevers of the coast belt are unknown. Still higher, above 5000 feet, a cool region is reached, which is known as the *Tierra Fria*. This includes the summit of the table-land and the pine-covered slopes of the mountains up to the height at which some of the peaks are capped with perennial snows. Much of this high table-land is valuable only for pasture; towards the north and north-east, where the plateau is wider, the landscape becomes bare and dry, and salt lakes like those of the plateau region of the western United States appear. Deeply-cut "cañons" or "barrancas," gorges with steep walls furrowed out by the mountain torrents, are characteristic of the plateau.

5. Mexico is very rich in gold, silver, quicksilver, and other metals, and the soil is generally fertile, so that mining and agriculture are the leading occupations; but from the frequently disturbed political condition of the country, and its debased social condition, every sort of industry has fallen to the lowest stage, and artificial communications in roads and railways are very deficient. Metals, vanilla, sarsaparilla, coffee, sugar, cotton, cochineal, and jalap, are the most important articles of export.

6. *Inhabitants and Religion*.—The population of Mexico consists mainly of the indigenous Indian race, and of the dominant Spaniards or their descendants. Spaniards born in Europe are now very few in number, but the government of the country is in the hands of the "Creoles," or people of Spanish descent born in Mexico. They number about a million and a half. Of the remaining mass of the population about half is of mixed race, half of pure Indian blood. The Roman Catholic is the religion of the country, but with the masses of the people this is a mere name, and education is at the lowest ebb.

7. By the present constitution Mexico is a federative republic of twenty-six States, a Federal District, and two Territories, bound together under a supreme government, but each permitted to manage its own local affairs. A Congress consisting of a House of Representatives from the States and a Senate, holds the legislative power, and the executive is in the hands of a

President elected by the Congress for a term of four years. The laws, however, are not well enforced.

8. The capital city of *Mexico* is very picturesquely situated in a high open valley near the centre of the plateau, at an elevation of nearly 7500 feet above the sea, and near the border of a large lake. The majestic peak of Popocatepetl rises at the southern side of the plain. The city has splendid buildings, including a great cathedral and eighty churches. Some of its streets and squares are wide and spacious, but other quarters have narrow and filthy lanes, the city itself representing the wealth and decay of the State. *Puebla*, east of the capital, among the mountains, is the second town and the most industrious place in Mexico. *Guadalajara*, north-west, is also a city of magnificent palaces and churches. *Vera Cruz*, founded by Cortes, is the only port of the country on the Gulf side and the great outlet of Mexico to the Atlantic. It has a dangerous, unhealthy, and exposed roadstead, but most of the external traffic of Mexico passes through it. *Acapulco*, the chief port on the Pacific coast, on the other hand, possesses a fine harbour. *Mazatlan* is also an important outlet of the country on the Pacific side.

CENTRAL AMERICAN STATES.¹

1. The portion of the narrower belt of land joining North and South America that is occupied by the Central American States reaches from the southern borders of Mexico, south of the peninsula of Yucatan, to the beginning of the Isthmus of Panama, which forms part of the United States of Colombia. The width of this section of the continent varies from 70 to about 300 miles, and its extent is somewhat greater than twice that of Great Britain.

2. Relief.—Its coast-lines differ remarkably in configuration. That towards the Caribbean Sea on the east is deeply invaded by the Bay of Honduras, and reaches out seaward in submarine banks from its low shores; that towards the Pacific, on the other hand, is comparatively straight, and falls steeply to the deep ocean. Instead of a continuous mountain range we have here a series of table-lands attaining their greatest width in the northern State of Guatemala, and interrupted by deep intervening valleys, and flanked by rows of commanding volcanoes, such as those of *Agua* and *Fuego* (13,980 feet). In no other part of the world excepting the East Indies are volcanoes more numerous and violent in their eruptions.

3. Rivers and Lakes.—These States have the advantage of excellent harbours on both seas, and a few of their rivers, such as *Dulce* and *Motagua* flowing into the Bay of Honduras, and the *San Juan* falling into the Caribbean Sea, are to some extent navigable. The last is the overflow of the large *Lake of Nicaragua*, which has an extent of more than 6000 square miles, and which is deep enough to be navigable by large vessels.

	Area.	Population.
¹ Republic of Guatemala	46,770	1,200,000
„ Honduras	46,520	350,000
„ San Salvador	7,230	482,000
„ Nicaragua	51,660	300,000
„ Costa Rica	19,950	185,000
Colony of British Honduras	7,560	25,000
Central American States	<u>179,690</u>	<u>2,542,000</u>

4. **Climate and Landscape.**—The whole country is within the torrid zone, but the elevations of its plateau give it a temperate climate in many portions. As it lies across the path of the prevailing easterly trade winds which sweep from the Atlantic over the Caribbean Sea, bringing an abundant supply of moisture, Central America is copiously watered, especially on that side of it which faces the direction of these winds. Thus it comes about that all the eastern slope to the Caribbean Sea is densely forest-covered; so densely that many parts of it have remained to the present day closed to civilisation, and are inhabited only by wandering Indian tribes, while the more open and cultivable lands on the Pacific side have been settled by Europeans or their descendants.

5. **Products.**—The Central American States derive importance first from their geographical position on the isthmus between the Atlantic and Pacific Oceans, and next from the abundance of their natural products, their wealth of fine timbers, such as mahogany, cedar, and dyewoods, the valuable balsams, sarsaparilla, and indiarubber obtained in their forests, and the cultivated coffee, cacao, indigo, and cochineal.

6. **People.**—Almost everywhere in Central America the aborigines, the so-called Indians, are by far the most numerous element of population; though divided into various tribes, they have the common features of a copper-brown colour, robust and muscular figure, straight black hair, and high cheek-bones. The Whites or Creoles, descendants chiefly of the Spanish invaders, constitute only a small though dominant section of the inhabitants; besides these the Mestizos or half-castes form a considerable element. Negroes, descendants of those introduced, are in very limited numbers.

7. The five Central American Republics.—(1.) *Guatemala*, the most northerly, may be compared in extent to Ireland. Its capital, situated on a green plain 4500 feet above the sea, and 40 miles inland from the Pacific coast, takes the name *Nueva Guatemala* since the former capital westward of it was destroyed by earthquakes in 1773. *Izabal*, on the Atlantic, and *San José*, on the Pacific, are the two outlet ports of the country.

(2.) *Honduras* reaches across the isthmus from its bay on the Caribbean Sea to the Gulf of Fonseca on the Pacific side, and is for the most part forest-covered. Its small capital of *Comayagua* lies near the centre of the State. *Omoa* and *Trujillo* are its chief ports on the Atlantic side.

(3.) *San Salvador*, the smallest of the republics, extends along the Pacific side south-west of Honduras, and may be compared to Wales in area. Its capital of *Nuevo Salvador*, so named because the older city near it has been repeatedly destroyed by earthquake, is near the centre of the State, and is joined by a good road to the port of *Libertad*.

(4.) *Nicaragua* is also still in great part a wild forest country. Its most valuable belt is that which extends along the valley of the San Juan river, and round the shores of lakes Nicaragua and Managua. The seat of government is now at *Managua*, a small town on the southern border of the lake of its name, and on the slope of an active volcano. *Greytown* or San Juan del Norte, at the mouth of the river San Juan, was formerly a magnificent port, and is still the chief outlet of Nicaragua to the Atlantic.

(5.) *Costa Rica* (rich coast) is the most flourishing and cultivated of the Central American States. Its capital, *San José*, on the central heights of the isthmus, 4500 feet above the sea, is united by road to *Punta Arenas*, in the Gulf of Nicoya, on the Pacific, and by railway to the port of *Limon*, on the Caribbean Sea.

8. *British Honduras* or Belize, a territory extending between Guatemala and the coast of the Bay of Honduras, is valuable mainly from the mahogany

and logwood of its forests, which are floated down by the rivers to the sea, and shipped in large quantities.

9. Among the many schemes planned for connecting the Atlantic with the Pacific by a ship canal across the Central American isthmus, there is one which would take advantage of the lake of Nicaragua and its outflowing river, San Juan. The lake itself stands at an elevation of only 131 feet above the sea, and the lowest pass between it and the Pacific coast is not more than 109 feet above the level of the lake waters. The San Juan is interrupted by rapids, but these could be passed by locks and canals.

WEST INDIES.

1. The West India Islands form a long archipelago that reaches in a curve from between Florida and Yucatan round to near the Venezuelan shores of South America. Their line thus constitutes a broken barrier separating the open Atlantic from the mediterranean Gulf of Mexico and the Caribbean Sea. The islands differ very considerably in size—from that of Cuba, which is larger than Ireland, down to the smallest rock, and they also exhibit great diversity in elevation and aspect.

2. Divisions.—Three chief divisions are recognised in the archipelago. First stand the *Greater Antilles*, including Cuba, Hayti, Puerto Rico, and Jamaica, which are large islands with diversified surface, reaching up to heights of over 8000 or 9000 feet; second, the low, flat, coralline group of the *Bahamas* or *Lucayas*, lying outside of the former, towards the Atlantic; and third, the chain of the *Lesser Antilles*, a series of volcanic mountain tops, stretching from the most easterly of the Greater Antilles to near the coasts of South America.

3. Climate.—Though they lie almost exclusively within the torrid zone, the climate of the West India Islands is modified by the influence of the surrounding seas, by elevation in many of them, and by the prevailing trade-wind which blows over them. The northern islands, including Cuba and Hayti, have a rainy season during the summer months. Jamaica and the southern islands, on the other hand, have a double rainy season—in summer, and again towards the end of the year. Yellow fever is the scourge of the coasts of the islands during the rain, and the group is exposed to occasional hurricanes of furious strength that are most frequent in the months of August and September.

4. Products.—The warm climate and copious rains render the West Indies admirably suited to the growth of sugar-cane, tobacco, and tropical fruits. Hence the staple articles of commercial produce are sugar, rum, and molasses; cotton, coffee, and cacao; indigo and dyes; spices, oranges, bananas, pine-apples, and many other fine fruits, besides valuable hardwoods.

5. Population.—The inhabitants of the archipelago, numbering nearly four and a half millions, are of three great classes. The most numerous class, comprising about three-fourths of all, is that of the *Negroes* imported from Africa, some of whom are still in a state of slavery in the Spanish islands; next come *Europeans*, or their descendants, from various nations; and third, *Mulattoes*, or people of mixed European and negro blood.

6. At the present time the islands are held as follows:—

		Square miles.	Population.
I. THE GREATER ANTILLES	Cuba (a Spanish colony)	45,883	1,400,000
	Hayti { Hayti (a Negro republic)	9,230	550,000
	San Domingo (a Spanish Creole republic)	20,600	250,000
	Puerto Rico (Spanish)	3,530	658,000
	Jamaica (a British colony)	4,193	558,000
II. THE BAHAMAS (including the Turks	Caymans (British)	225	2,400
		5,613	39,200
	Virgin Islands { British	64	6,400
	Danish (Santa Cruz, etc.)	138	37,600
	Spanish	66	3,500
III. THE LESSER ANTILLES	Anguilla (British)	35	4,000
	St. Martin { French	200	3,500
	Dutch	18	3,700
	St. Bartholomew (French)	8	2,400
	Saba and St. Eustatius (Dutch)	13	4,000
	St. Christopher or St. Kitts (British)	68	24,200
	Nevis (British)	46	11,700
	Antigua with Barbuda (British)	170	35,700
	Montserrat (British)	32	8,700
	Guadeloupe (French)	613	159,600
	Marie-Galante (French)	75	18,000
	Dominica (British)	291	27,200
	Martinique (French)	380	161,800
	St. Lucia (British)	237	35,500
	St. Vincent (British)	147	35,700
	Grenada (British)	166	42,300
	Barbadoes (British)	166	177,600
	Tobago (British)	114	18,600
	Los Roques, etc. (Venezuelan)	90	(uninhabited)
	Curaçao, Buen Ayre, Oruba (Dutch)	405	34,900
Total		92,821	4,318,400

Spanish: 49,479 square miles; 2,061,500 inhabitants. British: 11,567 square miles; 1,027,200 inhabitants. French: 1281 square miles; 344,500 inhabitants. Dutch: 436 square miles; 42,600 inhabitants. Danish: 138 square miles; 37,600 inhabitants. Independent: 29,920 square miles; 800,000 inhabitants.

7. *Cuba*, the largest and most important of the West India Islands, lies midway between Florida and Yucatan. It is about 750 miles in length, though only 70 miles in average width. A high cross range, called the Sierra Maestra, or the Copper Mountains, gives its form to the south-eastern portion of the island, where it is broadest, and from that a central ridge extends through the length of Cuba, forming the water-parting of its streams. Much of the island is covered with dense timber forests, and the low coast-lands are fringed with lagoons. The cultivated tracts produce sugar, tobacco, coffee, cotton, and indigo in great abundance. Cuba yields more sugar than any other country, and its tobacco is renowned all over the world.

Havana, its capital, on the north coast, is by far the most important city and the finest port of the West Indies, and it is the greatest sugar market in

the world. *Matanzas*, a seaport 55 miles east of Havana, *Santiago de Cuba* in the south-east, and *Puerto Principe* in the eastern interior, are the other important towns of Cuba.

8. *Hayti* or *San Domingo*, between Cuba and Puerto Rico, is a mountainous forest island, and may be compared to Scotland in extent; its highest point reaches the great elevation of 9695 feet. This rich island has had a very turbulent history, owing to which its productions and the industries to which they might give rise remain undeveloped.

The negro *Republic of Hayti*, occupying the western half of the island, has its capital at *Port au Prince*, at the head of a bay of the west coast; the eastern *Republic of San Domingo* has *Santo Domingo* for its capital.

9. *Puerto Rico*, the second Spanish island, has a length east to west of about 100 miles, and in contrast to its western neighbours is highly cultivated and covered with "*Estancias*" or cattle farms, and plantations of sugar, tobacco, and coffee. Its capital and port of outlet is *San Juan* on the north-east coast.

10. *Jamaica*, the most important by far of the British West India islands, lies south-east of Cuba, and has a length of about 140 miles. The wooded range of the Blue Mountains traverses it from east to west, rising to a height of 7335 feet, and giving the island a variety of climate from that of tropical coast-lands to temperate and cool stages above in the mountains.

It contributes to commerce large quantities of rum and molasses, great quantities of pimento or allspice, besides coffee, dyewoods, and mahogany. It is placed under a Governor appointed by the crown, who is assisted by a House of Assembly chosen by the freeholders of the island.

Spanish Town the seat of government, *Port Royal*, and *Kingston* the commercial capital and largest town, lie on the shores of an inlet of the south coast.

11. The Lesser Antilles are subdivided naturally into two main groups—those of the *Windward* Islands, or the chain extending from the Virgin Islands to Trinidad which lies farther out towards the direction from which the prevailing trade-wind blows; and the *Leeward* Islands off the coast of Venezuela. The island of *St. Thomas*, in the Virgin group, forms a most important station for the great lines of steam communication between Europe and the West Indies. *Guadeloupe* is the most important of the French islands. *Barbados*, with the capital of *Bridgetown*, is the most populous of the southern Windward Islands, and its episcopal see embraces the whole group. *Trinidad*, remarkable for its pitch lakes, is the largest of the Windward chain.

12. The low-lying *Bahamas* number several hundreds of separate islands, but only a few are inhabited. They yield dyewood, and salt and turtles. *Nassau*, on Providence Island, is their capital. The *Bermudas* islands, an isolated group out in the Atlantic, 650 miles north-east of the nearest of the Bahamas, do not naturally form part of the West Indian Archipelago, but are generally classed with that group. The group belongs to Britain, and consists of about 400 coral reefs and rocks, with five small islets, which are fortified to form a useful naval station and penal settlement.

SOUTH AMERICA.

UNITED STATES OF COLOMBIA.¹

1. The Republic of Colombia, formerly known as New Granada, occupies the north-western corner of the mainland of South

	Area, sq. m.	Population.
1 Colombia	320,700	3,500,000

America, including also the narrowest portion of the Central American isthmus. The Caribbean Sea washes its shores in the north; the Pacific, its western coasts. The States of Ecuador and Venezuela lie south and east of its territory. In extent we may compare Colombia to nearly four Great Britains.

2. **Relief.**—The general features of the relief of Colombia are given by the three great ranges of the Northern Andes, which traverse it from south to north. The central of these Cordilleras reaches a height of over 18,000 feet in the peak of *Tolima*. Between the eastern and central ranges lies the valley of the *Magdalena*, the chief river of the State, and between the central and western heights, that of the *Cauca*, the largest tributary of the former river.

3. **Climate and Products.**—These varied natural features give great diversities of climate to the tropical region, the mass of table-lands which lie along the eastern heights having a cool and healthy climate well suited to the white race. Towards the east vast grass plains, affording pasture to large herds of cattle, reach away into the basin of the Orinoco. Most of the metals—gold, silver, copper, lead, iron—occur in Colombia, but from the deficiency of highways the resources of the country are as yet to a large extent undeveloped, and less than a tenth of the area is cultivated. Tobacco, quinine, coffee, hides, indiarubber, and cotton, are the staple exports.

4. **People and Government.**—The inhabitants are composed of the descendants of the Spanish colonists, who are dominant, and aboriginal Indians called “Chibchas,” most of whom are christianised, and speak the Spanish language. A small number of tribes still, however, maintain a savage mode of life.

The government is republican, the executive authority being vested in a President, the legislative in an elected Congress; but each of the nine States into which the country is divided has its own local legislature.

5. **Chief Towns.**—The capital and seat of government is at *Bogotá*, which stands on a plateau of the Eastern Andes at an elevation of 8700 feet above the sea, beside the stream of its name that tumbles down to the Magdalena by the magnificent fall of Tequendama. A railroad has been planned to join Bogotá with *Honda*, the farthest point to which the Magdalena river is navigable by steamers. *Baranquilla*, and its port of *Savanilla*, at the mouth of the river, is the chief outlet of the mainland. The foreign trade of Colombia, however, is carried on chiefly by the Isthmus ports of *Panamá* on the Pacific, and *Colon* or *Aspinwall* on the Atlantic side, the termini of the railroad that joins the two oceans, and which has been in operation since 1855.

ECUADOR.¹

6. The Republic of Ecuador (or Equator) embraces that portion of western South America which reaches across the Andes from the Pacific into the basin of the Amazon, directly under the equinoctial line. It lies between the States of Colombia on the north of it, and Perú southward, and reaches from the ocean eastward to the frontier of Brazil.

	Area, sq. m.	Population.
¹ Ecuador	248,400	1,146,000

7. **Physical Features.**—The great features of Ecuador are given by the enormous mass of the Andes, rising near the Pacific coast. Here the range forms the high, cool table-land of Quito, along the edges of which the dome-shaped *Chimborazo* (20,700 feet), *Ilinissa*, *Pichincha*, *Antisana*, *Cayambe*, the cone of *Cotopaxi* (19,500 feet), and other giants of the Andes rise in two parallel chains. Level tracts, called “paromas” or “punas,” covered with scanty sun-dried grasses, are characteristic of the high plateau, but all the long inner slope of the country to the Amazon basin is covered with forests and enclosed savannahs.

8. The rivers of the steep slope of Ecuador to the Pacific are comparatively small and short, the *Guayaquil*, *Esmeralda*, and *Mira*, being the most considerable, the first affording more than 100 miles of navigation. The inward slope, on the contrary, is watered by some of the great feeders of the Upper Amazon, the *Japura*, *Putumayo*, and *Napo* being the largest.

9. **Products.**—Little is known as yet of the resources of Ecuador in regard to the precious metals which are so abundant in other parts of the Andean region. The product of the country which is, as yet, of greatest importance to the outer world is its *cacao* or cocoa, which is abundant in the low-lying or hot regions of Ecuador. Quinine bark is also an important product of the equatorial forests along the Andes.

10. **People.**—The inhabitants of Ecuador consist of descendants of the Spanish conquerors, “Mestizos” or half-breeds, and aboriginal Indians. The more civilised and the greater number of the population are found living in the high mountain valleys; almost the whole of the eastern forest slope to the Amazon basin is occupied only by scattered Indian tribes.

11. **Government.**—The President of the Republic of Ecuador is elected for four years; the Congress, also elected by universal suffrage, has the legislative power. The priesthood, however, possess a far stronger influence, and exercise a much greater control over the affairs of the State, in Ecuador than in any other part of South America. For administrative purposes the country is divided into ten provinces.

12. **Chief Towns.**—The capital is the city of *Quito*, grandly situated on the table-land at an elevation of 9500 feet above the sea, and commanding splendid views of the snow-clad cones of the Andes from its great square. Almost all the foreign commerce of Ecuador passes by its port of *Guayaquil* at the mouth of its navigable river. *Cuenca* and *Loja* are important places in the southern table-lands.

13. The archipelago of the *Galápagos* or Turtle Islands, nearly under the equator, and 600 miles out in the Pacific, belongs to Ecuador. The islands are of volcanic origin, and present only dreary wastes of extinct cones and craters, and they are quite uninhabited. They are chiefly interesting on account of their remarkable indigenous reptiles and birds, most of which are unknown in any other part of the world. A remarkable kind of turtle and the gigantic tortoise found here have given their name to the group.

VENEZUELA.¹

14. The States of Venezuela (or Little Venice) reach along the northern border of the continent from Colombia on the west to the British colony of Guayana or Guiana on the east, having a coast-line of between 300 and 400 miles on the Caribbean Sea, from the

	Area, sq. m.	Population.
¹ Venezuela . . .	440,000	1,800,000

mouth of the Orinoco to the gulf and lake of Maracaybo. Inland the frontier touches northern Brazil. In extent the territory of Venezuela may be compared to twice that of France, or to nearly five times the area of Great Britain.

15. **Relief.**—There are two distinct highland regions—first, a divergent Cordillera of the Andes in the north-west, which culminates in the *Sierra Nevada de Mérida* (15,027 feet), and which is continued as a steep coast range along the length of the shores of the Caribbean Sea; and, second, a great mass of forest-covered hills and mountains forming Venezuelan Guayana in the south-east.

16. **Rivers.**—The great river of Venezuela, the *Orinoco*, curves round the southern mountainous region, receiving large tributaries from its slopes, ultimately forming a great delta on the Atlantic coast, south of the British island of Trinidad. The navigation of this noble river is uninterrupted from the sea upward beyond Venezuelan territory; the *Meta*, the largest western tributary, has been ascended by steamboat to within 60 miles of Bogotá in Colombia. A most remarkable natural canal, named the *Casiquiare*, a broad navigable channel, unites the Upper Orinoco with the Rio Negro, a tributary of the Amazons. Another remarkable feature of the hydrography of Venezuela is the fine lake of *Maracaybo*, the largest lake of South America, united by a narrow channel to its sea gulf. The earliest Spanish explorers found houses built on wooden piles at the entrance to Lake Maracaybo. These reminded them of Venice, and originated the name Venezuela, which has extended to the whole region.

17. **Landscape and Products.**—The northern slopes of the coast range are entirely forest-covered, and shelter sugar and cacao plantations in their hollows, but southward begin the broad open grass plains or "*llanos*," that reach away south to the Orinoco, covering the greater part of the country. Beyond the Orinoco rise the wooded ridges of Venezuelan Guayana. The cattle, horses, and sheep, reared upon the vast expanse of the "*llanos*" form the wealth of Venezuela; but coffee, cacao, cotton, sugar, indigo, and tobacco, grown on the northern plantations, are exported in large quantity, as well as dyewoods from the forests. Copper is mined at Aroá in north-western Venezuela.

18. **People and Government.**—The present population of Venezuela is, for the most part, a Mulatto one, derived from the intermixture of the Spaniards and their African slaves with the native Indian element. Pure Indians live in the hilly forest region of the south-east. The government of the Republic is designed on the model of that of the United States of North America; but the States and Territories of Venezuela, of which there are twenty-four, are permitted greater independence in their local government.

19. **Chief Towns.**—The capital city of *Caracas* is delightfully situated in a valley of the northern coast range, at an elevation of 2900 feet above the Caribbean Sea, and twelve miles from its port of *La Guayra*. *Valencia* and *Barquisimeto* are the largest places in the northern interior, and *Maracaybo*, near the outlet of the great lake, comes fourth in importance. *Puerto Cabello*, west of La Guayra, and opposite the large inland town of Valencia, to which it is united by road, is the chief port of the richest portion of Venezuela. A line of railway, 70 miles in length, the only one as yet existing in Venezuela, was opened in 1877, between the port of *Tucacas*, west of Puerto Cabello, and the mines of *Aroá*.

Five lines of steamers maintain regular communication between Venezuela and the ports of Europe.

GUAYANA.¹

20. The region of South America called Guayana extends from the east of Venezuela and the north of Brazil to the coasts of the Atlantic. We have seen that a large portion of it is included in the Orinoco basin of Venezuela; Brazil also claims its southern portion in the Amazon basin; but the name is now more generally limited to the region which is drained northward to the ocean by the rivers Essequibo, Corentyn, and Maroni or Marowyne, and which is divided into the three colonial possessions of British, Dutch, and French Guayana.

21. From the low, marshy coasts of the Atlantic, the inland regions of Guayana rise between the river valleys in hills densely covered with exuberant forest vegetation. Its woods and rivers are peopled by abundance of wild animals similar to those of Brazil, along with birds, reptiles, and fishes of the most varied and remarkable description.

The few European settlers live at their plantations, which lie near the mouths of the rivers or on the fertile lowlands of the coast; and in recent years numbers of Indian and Chinese coolies have been introduced as labourers, the negroes of the colonies being now all free men. The interior woodlands are left, as yet, to a few Indian tribes, most of them Caribs, who, however, appear to be rapidly decreasing in numbers.

22. The staple cultivated product of the plantations of Guayana is sugar, large quantities of which, with rum and molasses, are exported. The cultivation of coffee and cotton has greatly declined, but there is a large trade in the fine forest timber.

23. British Guayana, the western possession, occupies almost the whole basin of the *Essequibo* river, besides those of the *Demerara* and *Berbice*, the *Corentyn* forming the boundary towards Dutch Guayana. It is by far the most flourishing, agriculturally and commercially, of the three colonies. *Georgetown*, its capital, on the *Demerara*, is well built of wooden houses and is intersected by canals. *New Amsterdam* is a small place on the *Berbice*.

24. Dutch Guayana, in the middle, reaches across from the *Corentyn* to the *Marowyne*, which divides it from French Guayana. The *Surinam* is the most important interior river of the colony, and on it, at a distance of ten miles from the sea, lies the capital town of *Paramaribo*, with wide straight streets planted with orange trees.

25. French Guayana, reaching from the *Marowyne* to the *Oyapok*, the boundary river towards Brazil, has been used rather as a penal settlement than as a commercial colony, so that the greater part of the European population consists of deported convicts and of the military guard in charge of them. The capital town of *Cayenne*, on the river of its name, is a wretched little place, dreaded on account of its deadly climate. A species of capsicum, which grows here, gives the well-known Cayenne pepper.

	Area.	Population.
1 British Guayana . .	85,420	240,000
Dutch Guayana . .	46,100	68,500
French Guayana . .	46,850	86,800

BRAZIL.¹

26. The enormous territory of the empire of Brazil very nearly equals that included within the boundary of the United States of North America, or is not far short of Europe in extent. The empire itself is by far the most important of the divisions of South America in area and population, as well as in prosperity and stability. It holds the Atlantic coast from Guayana in the north, for about 4000 miles, to the borders of Uruguay in the south, and reaches inland for nearly 2500 miles, its inner boundaries touching those of every one of the other States of the continent excepting Chile.

27. *Relief*.—This vast territory presents two contrasted regions. First, the wide, low-lying, and humid forest plain of the Amazon river in the north; second, the uplands in the south, which are traversed by radiating hills and mountain ridges, and which present wide grass plains between woods and bush-covered country. The highest mountain ranges of Brazil rise in the centre of the south-eastern uplands, where the *Montes Pyrenos* rise to 9500 feet, but the coast range or *Serra do Mar*, to the south of the beautiful gulf of Rio de Janeiro, hardly yield to these, for within it the *Itatiaiosu* is scarcely 600 feet lower, whilst the *Organ Mountains*, at the back of Rio, has summits which reach up to 7500 feet.

28. *Rivers*.—To the rivers of Brazil belongs the huge *Amazon*, called the "Mediterranean of South America," whose great tributaries traverse all the northern lowland from the slopes of the Andes to the Atlantic. Its great feeders from southward are the *Jurua*, *Purus*, *Madeira*, *Tapajos*, and *Xingu*, all of them rivers of the first magnitude. From the north there come to it the *Japura* and the *Rio Negro*, which is joined by the remarkable channel of the Casiquiare to the basin of the Orinoco. The *Tocantins*, with its great tributary the *Araguaya*, flows northward through Brazil to the Gulf of Para, close to the mouth of the Amazon. The *Paranahyba* and *São Francisco* are the great rivers which flow from the uplands directly to the Atlantic. The *Paraná* and the *Paraguay*, the rivers which join to reach the sea by the La Plata Gulf, both take their rise in Brazilian territory.

29. *Products*.—In richness and variety of vegetable products, favoured in their growth by its tropical climate and copious rains and rivers, Brazil surpasses almost all other parts of the world. The forests supply useful timber in great profusion, as well as dyewoods and gums, such as the valuable indiarubber; the coco, sago, and wax palms, nuts, and fruit trees of many kinds, and the medicinal chinchona abound; and under cultivation flourish the coffee-plant, sugar-cane, cotton, rice, manioc, and banana. The cultivated districts are, however, as yet very small in comparison with the vast regions which remain in a state of nature.

The mineral products of Brazil are scarcely less celebrated. Gold is found in many parts, especially in the mountains round the head of the basin of the São Francisco river; quicksilver, copper, iron, and salt are also abundant; and probably no region of the world is richer in precious stones, including diamonds, emeralds, rubies, topazes, beryls, and garnets.

	Area.	Population.
1 Brazil . . .	3,219,900	11,100,000

The jaguar, puma, and tapir are the larger wild animals of the forests ; the capivari, or river hog, is abundant along the streams ; the rivers teem with alligators and fish ; the rhea, or American ostrich, toucans and parrots, and the lively humming-birds, are among the multitude of the feathered inhabitants of the woods and grassy plains.

30. **People.**—The inhabitants of Brazil, as of other parts of South America, present three great elements—that of the aboriginal Indians, that of the European conquerors and colonists and their descendants, and that of the Africans introduced as slaves. Besides these we find large numbers of half-castes, who have sprung from the intermixture of these three elements. The aboriginal Indians are now, for the most part, found in countless small tribes and families in the forests and plains of the wild interior region, the most numerous being the tribes forming part of the Great Tupi or Guaraní group. The most important section of the European element is that of the Brazilians, the descendants of the Portuguese settlers. The number of pure white people is, however, very small in proportion to those who have some mixture of Indian or African blood, and the Brazilians themselves have developed into a number of more or less distinct physical types in the widely separated provinces of the empire. Formerly about one-half of the entire population of Brazil was formed of negro slaves, the numbers having been maintained by continuous shipments from West Africa ; but the importation was made illegal in 1855, and since 1871 gradual emancipation of the slaves has been in operation, so that there are now (1879) only about a million and a half of slaves in Brazil.

The Roman Catholic is the established religion of Brazil, and though all other religions are tolerated, no churches or temples are permitted excepting the Roman Catholic. The Legislature has made great efforts to spread education in the more civilised portions of the empire, but schools are still in a very backward state.

31. **Industries.**—The staple production of Brazil for export is coffee. The empire supplies three-fourths of all the coffee used in the world. In sugar-growing Brazil is only second to Cuba. Large numbers of people are employed in forestry and in mining, but agriculture and stock-raising, and tending cattle, horses, and mules upon the vast grass plains of southern Brazil, employ a very considerable section of the inhabitants.

32. **Government.**—The succession to the crown of Brazil is hereditary. The constitution of the empire establishes four powers—the legislative senate and chamber of deputies ; the judicial ; and the executive and moderating powers, both of which are vested in the sovereign. The empire is divided into twenty-one provinces, at the head of each of which is a president appointed by the central government. Each province has also its local parliament.

33. **Chief Towns.**—The capital city of *Rio de Janeiro*, the largest in South America (230,000), extends along the shores of a land-locked gulf of the Atlantic, which is surrounded by the most romantic mountain scenery and the richest green vegetation. Its harbour, guarded by Island Fort, is one of the finest in the world, and through it a vast commerce is maintained with all seas. Next in importance is the city and seaport of *Bahia*, finely placed on an inlet of the Atlantic, the oldest city of Brazil. *Pernambuco*, also called Recife from a reef of rock which forms the natural breakwater of its harbour, is the third city. *Maranhão*, on an island of the north coast ; *Para*, the great indiarubber port, on the east bank of the great estuary of the Tocantins ; *Rio Grande* and *São Paulo*, with its port of *Santos*, are the other notable places along the Atlantic. In the interior the principal towns are *Ouro Preto*, in the gold-mining region, and *Diamantina*, the centre of the diamond fields.

Cuyabá, in the far west of interior Brazil, is important, as being at the head of the regular navigation into Brazil by way of the Paraná and Paraguay rivers.

PERÚ.¹

34. Perú ranks first in extent of the States of South America which lie along the Andes and the Pacific seaboard of the continent. The territory of the Republic lies southward of that of Ecuador, its inland boundaries east and south being conterminous with those of Brazil and Bolivia. The coast-line belonging to it measures about 1600 miles, and the area embraced by its boundaries may be compared to ten times that of England.

35. *Physical Features.*—No part of the world presents more varied physical features, from arid desert to the grandest mountains, and again to the dense forests with brimming rivers, or more diverse climates corresponding to these features. The “costa,” or low hot maritime belt of Perú, being almost deprived of rainfall by the barrier of the Andes, is a bare sand desert, fertilised only where it is crossed by the streams descending to it from the heights. All the mountain slope ascending to the high plateaus of the Andes, up which narrow mule-paths lead through deep ravines and along the edges of vast precipices, is named the “Sierra.” The high plains of the Andes reached by these difficult approaches are cold, bleak, monotonous wastes called “punas.” Above these the summit mountains of the Andes lift their rugged sides up to the region of perennial snows. Beyond the punas the descent of the continental or inward slope of the mountain region leads into the boundless woodlands of the Amazon basin, where copious rains fill out the tributaries of the vast river, and whence flow its great head streams the *Ucayali* and the *Marañon*.

36. *Products.*—Perú is most famous for its extraordinary mineral wealth. Silver is its chief metal, the most productive mines being found in the rigorous climate of the higher punas. Quicksilver is also very abundant. Copper seems to be present in all parts of the mountain region along with iron. The Republic also possesses great wealth in its deposits of guano and nitre in the maritime belt. The richest guano beds formerly worked for export were those of the Chincha Islands, near the coast, about 100 miles south of Lima; but great stores have recently been discovered in the districts which lie along the shores north of the Bolivian boundary river Loa. The camel-like guanaco roams in great herds on the punas and along the slopes of the Andes; and the llama or alpaca, the domesticated variety of the same animal, yields costly wool, besides milk and flesh food, and serves also as a beast of burden.

37. *People.*—A large proportion of the inhabitants of Peru at the present time consists of the descendants of the aboriginal Incas of the plateau, Indians of the Quichua and Aymará tribes, which, next to the Guarani, are the most widely diffused in South America. The other great element is that of the half-bred peoples, the “Cholos” and “Zambos,” who have arisen from the intermixture of Spanish with Indians and negroes. Wild Indians, of a different race from those of the highlands, occupy the still undisturbed forests of the eastern interior; the other minor elements are small proportions of

	Area in sq. m.	Population.
1 Perú . . .	432,500	8,000,000

Europeans, negroes, and Chinese, imported as labourers. The State religion is the Roman Catholic, and education, such as it is, rests in their hands. The public exercise of any other religion is interdicted by law.

38. **Government.**—The executive power is entrusted to a President, elected for four years, and is exercised through a Cabinet of five ministers, who hold office at his pleasure. For administrative purposes the Republic is divided into twenty-one departments. The State derives a very large revenue chiefly from the sale of guano; and of late years, while the internal conflicts and revolutions that have retarded the progress of the country have been less frequent, attention has been directed to the development of the mineral resources of the country, and the improvement of the rude means of communication. To this end a system of railways, uniting the seaports with the high plateau region, has been begun, and several lines have now been completed. The recent war with Chile, waged for the sake of a disputed boundary, has, however, almost exhausted the resources of the countries concerned. Lima and Callao are at present (1882) occupied by Chili.

39. **Chief Towns.**—The capital city of *Lima* (102,000), founded by Pizarro in 1534, who also began its magnificent cathedral, lies at the foot of the coast range of the Cordilleras, on both banks of the stream called the Rimac. Its flat-roofed houses of sun-dried clay would be changed into masses of mud if any considerable shower of rain should fall, but the coast belt in which it lies is rainless; earthquakes, however, have desolated it repeatedly. Six miles distant is its fortified seaport of *Callao* (34,000), commanding the best harbour of Perú, through which the chief share of the guano, nitre, metals, sugar, and alpaca wool is exported. *Cuzco*, the historical city of Perú, the ancient residence of the Inca sovereigns, stands at an elevation of nearly 11,400 feet above the sea, on the plateau, about 400 miles south-east of Lima. *Pasco*, famed for its silver mines, 13,670 feet above the sea, lies north-east of Lima, on the plateau. On the south the largest place is *Arequipa*, a flourishing city, lying about 30 miles from the Pacific, and carrying on a considerable trade through its port of *Islay*. *Arica* and *Iquique* are important outlets of the guano and nitre fields, on the south coast. *Truxillo*, 300 miles north of Lima, is the chief port of northern Perú.

BOLIVIA.¹

40. Bolivia, the most centrally-placed State of South America, equal in extent to Perú, embraces in its western region the highest plateau and ranges of the system of the Andes. On this side its boundary is for the most part conterminous with that of Peru, only a small portion of the bare coast-land of the Pacific, about 180 miles in length, between the river Loa and the frontier of Chile, being left to it as an outlet to the sea. Its eastern slope spreads out into the basins of the Amazon and La Plata, and there it touches upon Brazil and the Argentine Republic.

41. **Physical Features.**—As in Perú, the various regions of Bolivia differ very widely in elevation, climate, and landscape. Here also the cold bare grass-lands of the plateau, at elevations of 11,000 feet above the sea, are known as the "punas;" over these the giant peaks of the Andes, such as *Illimani* and *Sorata*, or the volcano of *Sahama*, rise to heights of more than

	Area in sq. m.	Population.
1 Bolivia . . .	500,900	2,000,000

22,000 feet. The slopes and cultivable districts of the lower mountains, between 5000 and 11,000 feet, are termed the "Valle," and possess a genial temperate climate. Lower down on the eastern or interior slope, the rich warm forest region below 5000 feet is known as the "Yungas;" but this name does not include the western lowland along the Pacific, which, as in Perú, is an inhospitable tract of shifting sands, hot, rainless, and barren. As in Perú also, the great rivers are those of the eastern slope; these include the upper waters of the great river *Madeira*, formed by the union of the Beni, Mamoré, and Guapore, which joins the Amazon; and the head streams of the *Pilcomayo*, one of the main feeders of the Paraguay river, which itself flows for some distance along the eastern boundary, separating Bolivia from inner Brazil.

The southern half of the great continental lake of *Titicaca* is also in Bolivia, and is overflowed in its territory by the Desaguadero to form the salt lake of the *Pampa Aullagas*, 200 miles south.

42. **Products.**—Bolivia, like Perú, is richly metallic; the mountain of Potosí, on the high plateau, is said to have yielded silver to the value of 130 millions sterling. The punas support great herds of the llama, and its varieties, the alpaca and vicuña, and the chinchilla, noted for its fur, lives in the mountains. The chinchona tree grows on the higher slopes, and the lowlands of the interior slope yield all the tropical products of Brazil. The opposite desert lowland of the Pacific coast has its value also in the rich silver mines of Caracoles, and in extensive nitre beds.

43. **People.**—The Indians of Bolivia are in three great divisions:—1st, the civilised Quichua and Aymará Indians of the plateau; 2d, the semi-civilised Chiquitos and Moxos Indians of the inner descent of the Andes; and 3d, the wild Indians of the low-lying forests beyond in the east, who belong for the most part to the Guaraní family. The strength of the population, however, lies in the mixed races—the half-caste descendants of Spaniards and Indians, called "Cholos"; the "Mulattoes," with Spanish and Negro blood; and the "Zambos," descendants of Negroes and Indians. Except in the towns, the Quichua language prevails over the Spanish. The Indians of the camp, as distinguished from those of the towns, are almost exclusively agriculturists or "arrieros,"—that is, herdsmen or drivers of the llama, sheep, or goats. The feasts of the Roman Catholic calendar are scrupulously observed.

44. **Government.**—The Republic is governed by a President, elected for four years, and by a Congress of two chambers, chosen by universal suffrage. As in the other Spanish Republics, the history of Bolivia has been marked by an almost incessant round of purposeless revolutions and civil strifes. The country is divided for administrative purposes into nine departments.

45. **Chief Towns.**—The present political capital of Bolivia is *Sucre* or *Chuquisaca*, situated at an elevation of about 9250 feet on the high plateau which divides the waters flowing to the Rio Madeira from those which turn south-east to the Paraguay. It is named from General Sucre, who won the great battle of independence at Ayacucho in southern Peru in 1824. *Oruro* and *Potosí*—the latter a decayed city—both at great elevations on the Andes plateau, are in the vicinity of the once famous silver-mines. *La Paz*, south-east of Lake Titicaca, is the largest city of Bolivia, and its great trading centre, *Cochabamba*, at the head of the Rio Mamoré, is the second town in population. The chief outlets for the quinine, hides, and metals exported, lie through southern Peru to its seaports, the only harbour belonging to Bolivia being the insignificant one of *Cobija*, south of the river Loa. This can never become important, as the steep descent of the Andes, practicable only for mules, and the arid desert of Atacama, separate it from the sources of supply.

CHILE.¹

46. The State of Chile, the most prosperous and advanced of the South American Republics, occupies a long narrow strip of territory between the coast of the Andes and the Pacific in the south-west of the continent. It reaches from the southern boundary of the coast-land of Bolivia in lat. 24° S.² to the southern extremity of Tierra del Fuego, through a distance of about 2200 miles, rising inland to the summits of the Andes, which here form a single chain at a distance of about 100 miles from the ocean, and having southern Bolivia, the Argentine Republic, and Patagonia, on its eastern frontier. Its area may be compared to that of the British Isles taken together.

47. **Physical Features.**—The range of the Andes, visible from the sea all along the coast of Chile, towers up in a series of volcanic cones and snow-clad peaks; the loftiest summit, that of *Aconcagua*, being probably the highest point of all the South American continent. Numbers of streams descend from the range, and have furrowed deep valleys across the width of the country. The most considerable of these are the *Maypú* near the centre of Chile, and the *Maule* and *Biobío* in the south, both of which are to some extent navigable. Earthquakes are very frequent in Chile.

48. **Climate and Products.**—This long strip of maritime country presents remarkable gradations of climate from north to south. Nearest the Bolivian maritime region the coast-land of Atacama is a hot, rainless, sandy desert without sign of vegetation. Coming southward, we gradually pass into a temperate climate which enjoys a moderate rainfall. This central belt is thus the most valuable and the most productive agricultural region of Chile. Farther south we pass into the latitudes in which the westerly winds blowing towards the mountains from over the wide Pacific bring with them such quantities of moisture that the rainfall is excessive; here, in southern Chile, in consequence of the abundant moisture, the mountain slopes are densely covered with evergreen forest.

As if in compensation for its aridity, the northern desert region in Atacama is exceedingly rich in minerals and metals, supplying copper especially in great quantities. Wheat, maize, and fruits known in Europe are cultivated in abundance in central Chile, and enormous herds of cattle and horses are grazed upon the extensive pasture lands along the valleys.

49. **People.**—The inhabitants of northern and central Chile are, for the most part, descendants of the intermixed Spaniards and native Indians, pure European blood remaining only in the best families; but in the extreme south the population becomes almost exclusively Indian. Here live the Araucanians, whom the Spaniards were never able to conquer, though their country is now nominally part of the Republic. More generally enlightened, peaceful, and industrious than the inhabitants of the other South American Republics, the Chileños enjoy a much greater share of prosperity. The Roman Catholic Church here, as in other parts of the continent, exercises a powerful influence, but in this case it is generally beneficial.

50. **Government.**—The President of the Republic of Chile is elected for

	Area in sq. m.	Population.
1 Chile	124,000	2,350,000

² At present (Jan. 1882), but in consequence of her military success, she claims the whole Bolivian coast region, including Cobija.

five years. A Senate and Chamber of Deputies control the legislature. Chile is divided into eighteen provinces, and claims a territory on the Straits of Magellan, besides the island of Juan Fernandez in the Pacific. It has gained the reputation of being the most orderly and best governed of all the South American Republics.

51. **Chief Towns.**—*Santiago*, the capital, in the centre of Chile, is a fine, well-built, and clean city, on an island plateau enjoying a delightful climate amid the magnificent scenery of the Andes. It is joined by railway with *Valparaiso*, the chief seaport of Chile, and the centre of its foreign trade. The other seaports of note are *Caldera*, the port of the inland mining town of *Copiapó*, remarkable for the frequency of the slight earthquakes which shake it; and *Coquimbo* in northern Chile; besides *Concepcion*, *Talcahuano*, and *Valdivia* in the south. The most frequented pass over the Andes eastward is that of *La Cumbre*, or *Uspallata*, between Valparaiso and Mendoza in the Argentine Republic, the summit of which is 12,800 feet above the sea.

ARGENTINE REPUBLIC.¹

52. After Brazil the Argentine Republic is the largest State of South America. Its territory reaches from the basin of the Pilcomayo river, on the borders of Bolivia, southward for 1200 miles to the Rio Negro, which separates it from Patagonia; and from the slope of the Andes on the west to the Uruguay river in the east. Its area may be compared to ten times that of Great Britain.

53. **Physical Features.**—Excepting on the north-west, where the spurs of the Andes reach down into the State, the surface of the Argentine Republic presents vast monotonous and level plains, broken only by the detached ridges of Córdoba and San Luis in the western interior. In the north, the portion of the region called the Gran Chaco, within the frontier, is partly forest-covered, but all the central and southern region presents only vast treeless plains or “pampas,” covered at most seasons with coarse grass, which is green in the winter months, but which dries up in summer so as to give an aspect of aridity to the plains. Some portions of the interior, called “Salinas,” are barren and white throughout the year.

The great watercourse of the country is the *Paraná*, formed by the union of the Upper Paraná and Paraguay rivers near the north-eastern corner of the State. This is a noble river, in all parts of its course through Argentine territory scarcely ever less than a mile in width, and in some places spreading out in lateral channels, or “riachos,” to a breadth of ten miles.

The *Pilcomayo*, which forms part of the northern boundary, may be said to be unknown as yet, no explorer having traversed its whole length; the *Vermejo*, the next river southward, has of late years become a regularly navigated highway from the Paraguay up to the north-eastern provinces; the *Salado*, farther south, flowing directly to the Paraná, is also an important river; but the remaining streams which tend eastward to the Paraná have not strength of water sufficient to resist evaporation in crossing the dry plains, and terminate for the most part in marshes and salt lakes.

54. **Climate.**—The seasons in this region of South America begin to be marked out, like those of Europe, but of course in opposite months—the shortest day of winter occurring in June, the longest day of summer in Decem-

¹ Argentine Republic (excluding Patagonia)	Area in sq. m. 828,000	Population. 1,813,000
---	---------------------------	--------------------------

ber. The climate is pleasant and healthy, and the rainfall is small. Stormy south-west winds, called "pamperos," sweep over the plains at times, and raise great clouds of dust, which fly across the plains.

55. Products.—The north-western provinces of the Argentine Republic, crossed by the lower ramifications of the Andes, are rich in metals, including gold, silver, nickel, copper, tin, lead, and iron, as well as in several kinds of marble, jasper, and precious stones. On the Rio Vermejo petroleum wells have recently been discovered; but the development of these treasures has hitherto been greatly retarded by the want of proper means of transport.

European grains and fruits, including the vine, have been successfully introduced, and are cultivated to some extent in most parts of the Republic. The great wealth of the State, however, lies in its countless herds of cattle and horses and flocks of sheep, which are pastured on the "pampas," and which multiply there very rapidly. The rearing and tending of these herds is the great and characteristic industry of the country; these also yield the enormous quantities of hides, horns, and salted beef, which form the staple export of the Argentine Republic.

56. People.—The European element is much stronger in the Argentine Republic than in any other part of South America. The aboriginal Indians of the plains were comparatively few in numbers; and being of nomadic habits, they shifted their ground before the advance of the foreigner, and have now been driven to the outer borders of the State, where their frequent raids are a source of constant anxiety to the settlers. Besides people of Spanish descent, the European population of the Republic has been made up largely of immigrant Italians, English, French, Americans, Swiss, and Germans. The typical inhabitants of the "camp," or country, as distinguished from the citizens of the Argentine State, are the semi-barbarian cattle-breeders and horse-breakers, called the "gauchos," who may be said to live on horseback, who are expert in the use of the "lasso" and "bolas," and who are ever ready to take a side in any fresh revolution.

57. Government.—The constitution of the group of States formerly called the United Provinces of the Rio de la Plata dates from 1853, and vests the executive power in a President elected by the representatives of the fourteen provinces for a term of six years. A National Congress wields the legislative authority. Notwithstanding many political troubles, the Republic is making rapid advances in social and political life. Already it possesses a fairly developed railway system; trade with Europe and other parts of the world has become very extensive; and public instruction is well cared for.

58. Chief Towns.—The capital, *Buenos Ayres* (178,000), on the level plain of the southern shore of the inlet of the Rio de la Plata, is the only large city of the Republic. It is laid out most regularly in square blocks, and has a number of fine public buildings. Its site is, however, a very disadvantageous one for commerce, since the sea opposite it is so shallow and exposed that large vessels are obliged to anchor twelve miles out from the city. *Córdoba*, nearly in the centre of the State, is the second town, and the seat of the chief observatory of the Republic. *Rosario*, on the right bank of the Paraná, more than 200 miles up from the La Plata inlet, is a substantially built town, and a great outlet of the animal produce of the interior plains, transport toward it being facilitated by a railway to the central town of Córdoba. *Tucuman* and *Salta* in the north-western mountain region, and *Mendoza* at the eastern base of the Andes, where they are crossed to enter Chile, with *Corrientes* on the Paraná, are the other important places of the Republic.

PARAGUAY.¹

59. The small country of Paraguay is the only one of the South American Republics that has no sea-coast. It has been called the "Mesopotamia" of the continent, since it lies between the great river *Paraná* and its large tributary the *Paraguay*. These rivers embrace the country east, south, and west. On the north its limit with Brazil is marked by the river *Apa*, a tributary of the *Paraguay*, and by the heights of *Maracaju* from the head of the *Apa* to where the *Paraná* forms its great waterfall of *Guayrá*, near lat. 24° S. In area Paraguay may be compared with England and Wales.

60. **Physical Features.**—A range of heights, about 2000 feet in elevation at the most, forming part of the great table-land of Brazil, stretches southward through the midst of the country, separating the tributaries of the *Paraná* from those of the *Paraguay*. The western slope of this central chain of heights presents a landscape of wide grassy plains fringed and patched with wood, and this is the portion of the country which has been occupied by the more civilised inhabitants. Most of the eastern slope, on the other hand, is covered with dense forests, which have scarcely been penetrated as yet by Europeans, and this side of the country remains in the hands of small tribes of aboriginal Indians. All the south-western angle of the country, where the *Paraná* and *Paraguay* rivers approach one another till they unite, is occupied by very extensive marshes, the largest of which is named "*Neembucu*," which means "the endless."

61. **Products.**—The forests of Paraguay are noted for their splendid timber trees; but the most important natural product of all is the tea called the "*yerba maté*," made from the dried leaves of a species of holly that grows along the central heights. Tobacco and mandioca are cultivated in small quantities all over the western half of the country. No minerals of workable value have yet been discovered.

62. **People.**—The inhabitants of the western half of Paraguay show every gradation and intermixture of people of Spanish descent with the aboriginal Guaraní Indians. Spanish is the language of the capital, but in the camp Guaraní only is understood. Previous to the disastrous six years' war between Paraguay and the united strength of Brazil and the Argentine Republic, the population amounted to perhaps a million and a half, but this is now reduced to perhaps 300,000, the men of Paraguay having been almost exterminated in the long contest.

63. **Government.**—The present constitution of Paraguay dates only from the termination of the great war. It vests the control of the Republic in a Senate and Chamber of Deputies, with a President; but since 1870 an almost continual round of revolutions has further drained the shattered resources of the country, and brought it into a state of complete ruin.

64. **Asuncion**, the capital, the only large town of Paraguay, lies on the summit of the steep bank of a lagoon formed on the eastern side of the *Paraguay* river, and presents a ruinous aspect, a number of fine public buildings being left in the unfinished state in which they stood at the commencement of the great war. Its trade is mainly in the yerba tea, which is sent

¹ Paraguay . . . Area in sq. m. Population (1876).
92,000 300,000.

down the river packed in hides in considerable quantities for use in the lower provinces of the La Plata. *Villa Rica*, in the centre of the southern half of the country, and *Concepcion*, on the Paraguay above Asuncion, are the only considerable places besides the capital. The ruined fortress of *Humaita*, on the Paraguay, near its confluence with the Paraná, is remarkable as having withstood a siege of several years against the united forces of Brazilians and Argentines.

URUGUAY, OR BANDA ORIENTAL.¹

65. Uruguay, or the Banda Oriental (the "eastern side"), as it is more commonly called, occupies the side of the inlet of the Rio de La Plata opposite to the Argentine Republic, and is shut off from that Republic on the west by the large river Uruguay. In area it may be compared to twice the extent of Ireland.

66. **Physical Features.**—In the north, where it touches Brazil, spurs and offshoots of the great plateau reach southward across the boundary, but all the west and south of the country is characterised by undulating grassy plains. Besides its harbours on the inlet of La Plata, and along its Atlantic coast, the communications of the country are aided greatly by the *Uruguay* river, which is navigable for large vessels from its mouth upwards to the rapids called the Salto Grande, in lat. 31° S. The most important interior river is the *Rio Negro*, which joins the Uruguay after draining the greater part of the central region.

67. **Products.**—The wealth of Uruguay is in its splendid pastures, which support immense herds of cattle, horses, and sheep. "*Estancias*," or cattle-farms, are dotted at intervals all over the land, the site of each house being marked in the open plain by its clump of ombu trees planted for their shade.

68. **People and Government.**—The number of inhabitants in the open country is necessarily very small; a fourth of the whole population is found in the capital. The constitution of the Republic dates from 1831, and the country has enjoyed comparative prosperity, though it has not escaped the curse of frequent revolutions.

69. *Monte Video*, the capital, on a promontory which reaches into the wide inlet of La Plata near its opening into the Atlantic, is a finely built and busy city, carrying on an extensive commerce with all parts of the world in exporting hides, tallow, and salted beef, and in importing manufactured cotton and iron goods. *Fray Bentos* and *Paysandú*, on the Uruguay river, have become important centres of the manufacture of extract of meat and of tinned provisions.

PATAGONIA AND TIERRA DEL FUEGO.²

70. All the vast extent of territory from the Rio Negro, which forms the southern boundary of the settled portion of the Argentine Republic, southward to the Strait of Magellan, is known to Europeans as Patagonia. In area we may compare it to four times Great Britain.

	Area in sq. m.	Population.
¹ Uruguay	70,100	450,000
² Patagonia and Tierra del Fuego	351,000	24,000?

71. **Physical Features.**—Towards the Pacific the territory of Patagonia is bordered by the southern Andes, which rise from the steep fiord-cut coast in a chain of high peaks. Many of these, besides the highest summits, named *Minchinmadviva* and *Corcovado*, are volcanoes. Towards the Atlantic the long eastward slope of Patagonia, as far as it has yet been explored, presents a succession of bare plains, in parts grass-covered like the Argentine pampas, in part strewn with shingle. Several rivers, besides the *Rio Negro*, the largest of which are the *Chupat* and the *Santa Cruz*, flow across the eastern slope to the Atlantic in deep *cañons* or gorges, which they have cut for themselves. The climate of southern Patagonia becomes very severe; the streams there are frozen over till September, and the winter winds blow over the bare plains, driving clouds of snow and sand with great violence.

72. **People.**—The numbers of the Patagonian Indians can only be approximately estimated, but they are very few in comparison with the vast extent of country over which they wander. The *Tehuelches*, or southern Patagonian Indians, are tall, fine people, nomadic hunters of the guanaco and ostrich. The north-west of Patagonia is occupied by the *Manzanas*, a less nomadic people, possessing flocks of cattle and sheep, and allied in language and appearance to the Araucanians of southern Chile, on the opposite slope of the Andes.

73. By a treaty concluded in 1881, nearly the whole of Patagonia, together with the eastern shore of Tierra del Fuego, has been assigned to the Argentine Republic, the Strait of Magellan remaining with Chile. On the northern shore of this strait lies *Punta Arenas*, a penal settlement and place of call for passing steamships. The Argentines keep up a small military colony at the mouth of the river Santa Cruz in representation of their claims.

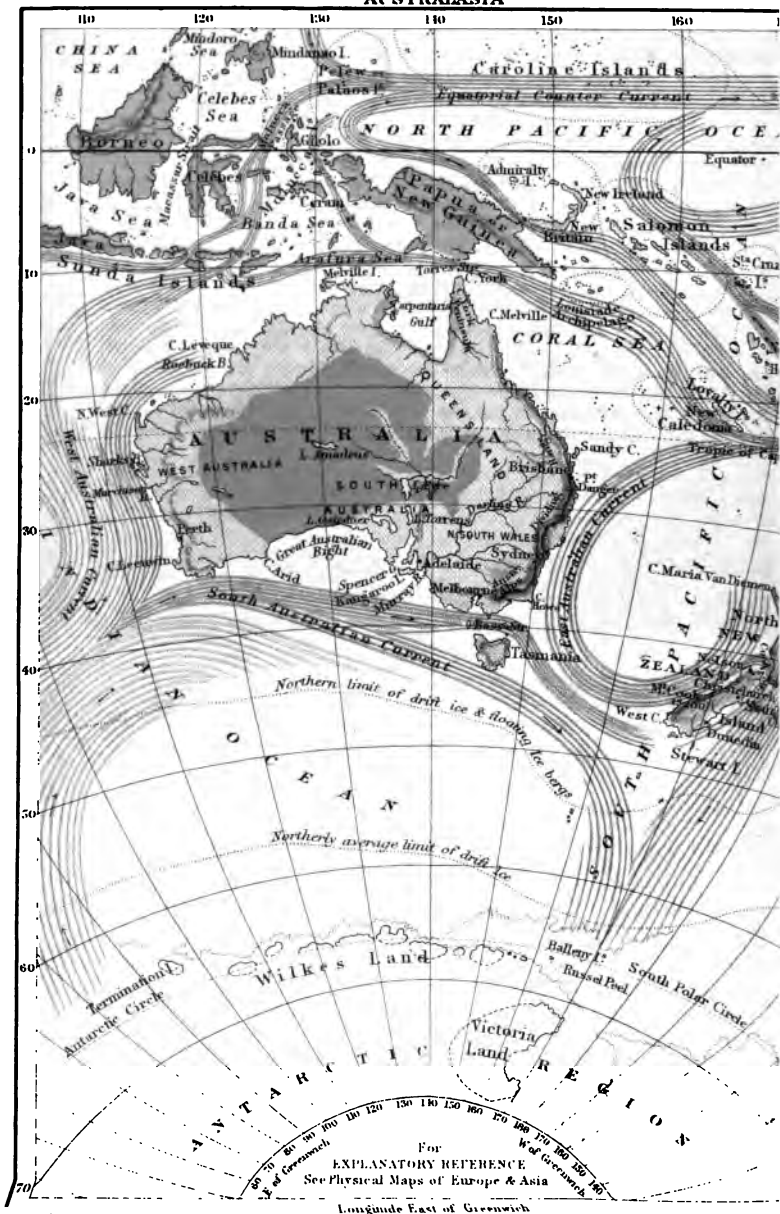
74. Tierra del Fuego and its surrounding archipelago of islands, reaching south to that of Cape Horn, are as yet little known. They are all high and mountainous, covered with thick woods, and their climate appears to be a succession of storms, thick mists, and drenching rains.

The Fuegians are of the same race as the Patagonian Indians, but are comparatively diminutive in stature, and seem to form one of the lowest sections of the human family. Clad in skins, they support themselves by fishing and hunting with bow and arrows.

FALKLAND ISLANDS.

75. The *Falkland Islands*, which lie at a distance of from 200 to 300 miles east of the Strait of Magellan, are under a British Governor. The islands, of which East and West Falkland are the chief, are larger than Devon and Cornwall. They have a large and desolate aspect, and are entirely treeless. They are well adapted, however, for cattle, horses, and sheep, which feed on the tall "tussac" grass that grows round their margins. They possess excellent harbours, and their coasts teem with fish, penguin, and seals. About 800 British and Argentines form their population, the seat of government being at *Stanley Harbour*, in East Falkland.

AUSTRALASIA



AUSTRALASIA.



AUSTRALIA.¹

1. THE name Australia, in its widest sense, groups together the continent or island of this name with New Zealand, Tasmania, and the smaller islands about these, all of which lie in the region between the Indian Ocean and the Pacific, south-east of the great continent of Asia. The mainland of Australia lies across the Tropic of Capricorn, so that the northern half of it falls within the torrid zone, the southern in the south temperate region. The open Indian Ocean washes its shores on the west and south ; the branch of the Indian Ocean called the *Arafura Sea*, leading to *Torres Strait*, separates Australia from the lesser Sunda Islands and from New Guinea ; on the east is the wide Pacific Ocean. Its coast-line, like that of Africa, is little indented, the deepest inlets being the *Gulf of Carpentaria* in the north and *Spencer Gulf* in the south. The islands round the Australian mainland are also few ; besides the *Tasmanian group*, separated by *Bass Strait* on the south-east, the only large island close to Australia is that named *Melville*, off the north coast. The most remarkable feature of the outline of Australia is the *Great Barrier Reef*, the longest coral belt in the world, which skirts the north-eastern coast for a length of more than 1200 miles at a distance of from 20 to 150 miles from the mainland ; on this reef the swell of the Pacific breaks continually, forming a long line of white foam, while the sea within the barrier is calm and still. The extreme points of Australia are *Cape York*, which runs out to form *Torres Strait* in the north ; *Cape Howe* at the south-eastern, and *Cape Leeuwin* at the south-western angle. The circumference of the mainland may be taken at about 8000 miles ; the length from east

Colonies.	Area in sq. m.	Population.*
¹ New South Wales	309,000	750,000
Victoria	89,000	858,600
Queensland	669,000	226,100
South Australia	904,000	279,900
West Australia	976,000	30,200
Mainland of Australia	2,947,000	2,144,800

* Excluding aborigines.

to west being about 2400, the width 2000 miles at most. Australia is about two-thirds of the extent of Europe.

2. *Relief*.—The surface of Australia in general lies at a small elevation only above the sea. This is especially the case in the wide central region of the continent; towards the margin, on several sides, greater elevations are found. The only mountainous portion, however, is a belt of about 150 miles in width, which skirts the eastern and south-eastern border next the Pacific Ocean. This belt includes, in the south-east, the range called the *Australian Alps*, known also as the Bowen Mountains and the Muniong or Warragong Mountains, the summit of which range, named Mount Kosciusko, 7176 feet above the sea, is the highest point in Australia; the *Dividing Range* along the eastern margin reaches northward to form the long peninsula that terminates in Cape York. The western coast-land next the Indian Ocean also rises above the level of the interior in the ranges of the *Darling*, *Herschel*, and *Victoria* hills. The highest known point of this belt is *Mount William*, near the south-west corner of Australia, which reaches 3600 feet above the sea. Between these outer heights the only considerable elevations that are yet known are those of the *Flinders Range* (3000 feet) in South Australia, and of the plateau of North Australia west of the Gulf of Carpentaria.

3. *Rivers and Salt Lakes*.—The only large river system of Australia is that of the *Murray*, the affluents of which—the *Darling*, *Lachlan*, and *Murrumbidgee*—drain the long inward slope of the eastern highland belt, to the south coast. The tributaries of the Murray are perennial, but the lower river, in its course through the dry plains, has an uncertain flow, failing altogether in some seasons, and becoming a chain of stagnant pools. The only considerable rivers of the continent that carry water to the sea throughout the year are those which fall into the Gulf of Carpentaria; two of these, at least, afford a short extent of navigable stream upward from the sea, but elsewhere Australia is without any internal water communication.

Inland salt lakes form a characteristic feature of the continent. The most remarkable group of these is that which lies north of Spencer Gulf in South Australia, where the fluctuating saline marshes called lakes *Eyre*, *Torrens*, and *Gairdner*, each exceed 100 miles in length. *Lake Amadeus*, more recently discovered in the heart of Australia, is a great saline depression similar to these. Numbers of smaller salt lakes occur in Western Australia, and many large lagoons fringe the sea margin of Victoria in the south-east.

4. *Climate and Landscape*.—The climate of Australia, tropical and sub-tropical, corresponds to that of Northern or Southern Africa in its dryness. The situation of the continent across the southern tropic corresponds very closely with that of the Sahara region of North Africa on the opposite one. Both lie within a belt over which the great trade-wind currents are advancing from colder to warmer latitudes, taking up moisture, rather than parting with it, as they advance. The system of this wind is modified in Australia, however, to a greater extent by the land and sea breezes which blow round its margins; but here, as in the Sahara, long periods of drought are characteristic of the climate. The slopes of the eastern mountain ranges, facing the winds from the Pacific and condensing upon themselves the moisture from the ocean, are by far the most fertile portions of Australia; the whole of the interior region may be said to be almost rainless. Thus entering from the Pacific side of the continent, we should pass from the cultivated fields and rich grass plains of the eastern hill slopes and plateaus into the uniform steppes of the interior, where the soil is bare and saline, and covered with thickets and scrub of a bushy *Eucalyptus* or prickly *Acacia*, often quite impenetrable. In the

Australian spring time the interior plains assume their freshest aspect, but in summer they become dreary wastes ; their little water-channels, or "*creeks*," dry up, and animals, as well as men, are content to search for pools of brackish water. The trees and shrubs which are found in Australia are almost all evergreens, so that there is little variation in the landscape from winter to summer except in the drying of the grasses to yellow hay after the summer droughts. The characteristic trees of the more favoured outer margins of Australia are the *eucalypti*, or "gum trees," which acquire large dimensions on the eastern maritime slope.

Notwithstanding its dryness, the climate of Australia is extremely salubrious, and excepting the northern tropical coast-lands, the country is everywhere well suited for European settlement.

5. **Animals.**—The fauna of Australia is distinct from that of any other region of the globe, and is characterised by the low organisation of its indigenous animals. Almost all the mammals—kangaroos, bandicoots, opossums—belong to the marsupial type, that is, are furnished with a natural pouch in which to carry their young. The "dingo," or wild dog, is almost the only carnivorous animal of the continent, and there are no indigenous hoofed animals. The birds of Australia stand unrivalled in their variety of form and beauty of plumage. The rivers within the tropics harbour formidable crocodiles, lizards and snakes are numerous, and fishes are found in endless variety on all parts of the Australian coasts.

6. **Products.**—Though, as we have seen, Australia possessed no native sheep, those introduced by the European settlers have thriven and multiplied in an extraordinary degree on its pastures, so that Australia has become one of the foremost wool-producing regions of the world. It vies also with California and the western United States in the abundance of its precious metals and minerals, especially of gold, besides silver, tin, copper, lead, iron, and coal. The most favoured and fertile region of the continent, the hill belt next the Pacific margin, is also the richest in metals.

7. **People.**—The aborigines of Australia belonging to the group of tribes called the Oceanic Negroes rank lowest of all in the human family. Once more numerous, they offered active resistance to the advance of the white men, and they still make exploration dangerous in some parts of tropical Northern Australia. Elsewhere they are now few and feeble, and are rapidly decreasing in numbers. Perpetual wanderers, they have resisted all efforts to draw them to civilisation. Their numbers are now approximately estimated at about 55,000, by far the larger proportion being found now in Northern Queensland. The bulk of the population of the continent is of European origin, most being descendants of emigrants from the British Isles. Chinese have become colonists in considerable numbers ; and Polynesian Kanakas, from the New Hebrides chiefly, have been introduced as labourers in some parts of tropical Queensland where the heat is too great for Europeans.

8. We shall look at the separate colonies as they have now developed themselves, beginning with the oldest or mother colony of

NEW SOUTH WALES.

This colony includes the south-eastern region of Australia from the Pacific coast inland to the 141st meridian, which separates it from South Australia. On the north a boundary drawn inland from

Point Danger, and then along the 29th parallel of latitude to meet the South Australian frontier, separates New South Wales from Queensland; on the south the Murray River, and a line drawn from its source to Cape Howe at the S.E. corner of the continent, divides it from Victoria. In extent the colony is about five times larger than England and Wales.

9. Physical Features.—The portion of the eastern maritime heights included in New South Wales takes the name of the Muniung Range or *Australian Alps* in the south. Here the summit, called Mount Kosciusko, reaches a height of 7176 feet. Farther north the chief sections of the mountains are named the *Blue Mountains*, the *Liverpool Range*, and the *New England Range*, which runs into Queensland. These heights form a short seaward watershed, and a long gradual slope towards the far interior. The *Shoalhaven*, *Hawkesbury*, and *Hunter* are the chief of the streams which drain the outer descent to the Pacific; the *Darling*, *Lachlan*, and *Murrumbidgee* take their rise on the inner slope, and flow over the plains south-westward to join the boundary river *Murray*. *Lake George*, in the midst of mountains, 2130 feet above the sea-level, is the most important lake of the colony. Its water is brackish, and occasionally the lake dries up, and sheep wander over its bed. The well-watered maritime valleys and the hill region above form the agricultural section of the colony, where European grains and fruits are cultivated in abundance. The wide grass plains of the long interior slope, called the "Riverina," form the pastoral lands of New South Wales, and are divided off into large sheep "runs," which vary in size, but some of which extend over areas of from 30,000 to 70,000 acres.

10. Minerals.—The most productive gold mines of New South Wales are grouped between the New England and Liverpool Ranges in the north, and between the sources of the Murrumbidgee and Murray Rivers in the south. Those which yield copper, silver, lead, tin, mercury, and iron, are widely distributed in the mountain region, but the chief source of supply of coal is in the neighbourhood of Newcastle, in the lower basin of the Hunter River.

11. People.—The population of New South Wales has now become a settled one, and occupations are regular and constant. Public instruction has made great progress; a university was established at Sydney in 1851, and has a staff of six professors. Religious freedom was granted by charter as early as 1836.

12. Government.—Responsible government was granted to the colony in 1855, and a Legislative Council, the members of which hold their appointments for life, was nominated by the Governor. A Legislative Assembly is chosen every three years by universal suffrage.

13. Chief Towns.—The capital, *Sydney* (224,000), on the southern shore of the splendid harbour, Port Jackson, is now a fine English town, united by several railway lines to the interior; its commerce extends to all parts of the world, and it sends out great quantities of wool, gold, coal, tallow, copper, and grain. The other important towns are *Paramatta*, 15 miles from Sydney; *Bathurst*, the chief interior town, west of Sydney; *Newcastle*, the great coal port, on the coast, at the mouth of the Hunter; *Mailland*, on the same river, 20 miles above its mouth, and in a district known, on account of its fertility, as the "granary of New South Wales;" *Goulburn*, the chief place in the southern gold-mining district; and *Deniliquin*, the centre of the pastoral district of the "Riverina," between the Darling and the Murray.

13A. Norfolk Island, 16 square miles in area, which lies out in the

Pacific at a distance of 900 miles east of Sydney, belongs to New South Wales. It is famous for its pine trees. Formerly it was a penal settlement, and afterwards some of the inhabitants of Pitcairn Island (*q.v.*) were transferred to it, and remained here for a time.

VICTORIA.

14. The colony of Victoria may be compared to Great Britain in area. It occupies the south-eastern corner of Australia, marked out by the Murray River and the boundary of South Australia along the 141st meridian.

15. **Physical Features and Products.**—The high chain of the Dividing Range and Bowen Mountains or *Australian Alps*, as it is variously called, passing centrally through the colony, gives it a northern inward watershed to the *Murray*, and a southern slope to the ocean, down which there flow many streams, the most notable of them being the *Yarra-Yarra*, on which the capital stands. The extensive basin of *Port Phillip* is the most important of the many inlets and lagoons which fringe the Victorian coast. The colony is eminently a pastoral one, possessing great stretches of rich succulent grass country; but since the discovery of gold, agriculture has made rapid advances. Trees are most abundant in the south-eastern valleys of the Australian Alps, in the district named Gippsland. The colony takes the first place as a gold-yielding region, but other metals are not found in any considerable quantities. The manufactures are varied, and they are encouraged by bounties and a protective tariff.

16. **People and Government.**—The population of Victoria now considerably outnumbers that of its parent colony of New South Wales, and the inhabitants are distinguished by great energy, health, and prosperity. Chinese are more numerous here than in any of the other Australian colonies, but the aboriginal blacks have almost disappeared from within its borders. Schools are well supported by the State, and general education is nowhere more advanced. With the other colonies of Australia, Victoria received responsible government in 1855. The executive rests in the hands of the Governor appointed by the Crown, the legislative with a Parliament of two Chambers.

17. **Chief Towns.**—The capital, *Melbourne* (283,000), on the inlet of the sea called Port Phillip, has become the largest city of Australia, and is in every way a fine European town, with straight wide streets and noble public buildings. Railways extend from it in all directions, and its manufactures are now very extensive. *Geelong*, also on Port Phillip, 45 miles south-west of Melbourne, rivals it in foreign trade. *Ballarat*, nearly 100 miles west of Melbourne, in the midst of one of the first discovered gold-fields, is the largest interior town. *Sandhurst*, formerly known as Bendigo, 100 miles N. N. W. of Melbourne, is the greatest mining centre of the colony.

QUEENSLAND.

18. This third section of the old colony of New South Wales occupies all the north-east of Australia from the 29th parallel, where it touches New South Wales, northward to Cape York, reaching westward to the boundary of South Australia and the shores of the

Gulf of Carpentaria. The vast area is nearly eight times larger than that of Great Britain.

19. Physical Features and Products.—Here, as in New South Wales, the maritime range of hills divides the colony into a narrow coast descent and a long interior slope. The principal streams draining to the Pacific are the *Brisbane*, *Burnett*, *Fitzroy*, and *Burdekin*. The interior has two watersheds—a north-western towards the Gulf of Carpentaria, and a south-western towards the salt lakes of South Australia and the Murray River. The *Mitchell*, *Flinders*, and *Leichhardt* are the chief rivers of the gulf drainage; the *Barcoo* or *Cooper Creek* and the *Warrego*, the largest of those which flow south-westward. Much of the Pacific border in Queensland has a hot, moist climate, well suited to the cultivation of sugar, cotton, indigo, and maize, and the outer mountain slopes are rich in woods. Up in the hill region wide areas of pastoral “downs” appear, and on these heights the climate is more temperate. The long interior slope passes gradually into the dry climate of the arid steppes of Central Australia, where the rivers fail to resist the rapid evaporation, and where rain is almost unknown.

The metallic wealth of Queensland is very great. In recent years very productive gold-fields have been found in the north; copper, tin, iron, and mercury are also widely distributed.

20. People and Government.—As yet the young colony has gathered only a small population in proportion to its vast area, and the greater number of settlers are found at present in the south-east next to New South Wales. The aborigines are still rather numerous in Northern Queensland. A few Chinese have settled in the colony, and Polynesians have been introduced as labourers on the sugar plantations.

The Government is on the same plan as in the other colonies.

21. Chief Towns.—The capital town of *Brisbane* lies close to Moreton Bay, which was first settled as a convict station in 1823. It has now grown into a flourishing town, and is the centre of the trade of the colony, extending its communications by railways inland, and exporting wool, cotton, sugar, timber, and preserved meats.

Ipswich, 25 miles west of Brisbane, is generally looked upon as the second town of the colony. *Maryborough*, on the Mary river, 25 miles above its mouth, is an important shipping port. *Gympie*, higher up on the same river, has productive gold mines.

Rockhampton, on the Fitzroy River, near the Tropic of Capricorn, ranks next to Brisbane in population, but is being rapidly outstretched by *Cooktown*, the shipping port for the Palmer river gold fields. The most northerly settlement of Australia is the station of *Somerset* on Cape York, the point of communication with New Guinea across Torres Strait. *Port Parker*, on the Gulf of Carpentaria, is rapidly rising into importance.

SOUTH AUSTRALIA.

22. The name South Australia was given to the settlement formed on the south coast of the continent in 1836, long before Victoria had been divided off as a separate colony from New South Wales. It has extended now to embrace all the vast central section of the continent from the great Australian Bight in the south to the coasts of the Arafura Sea and the Gulf of Carpentaria in the north;

but as the greater part of this enormous territory is northward of Victoria, and even of New South Wales within its later boundaries, the name has become a misleading one. The nominal boundaries of this colony include a space more than ten times greater than our island of Britain.

23. **Physical Features and Products.**—Much of this vast area remains unexplored; but there is little doubt that by far the larger part of it is occupied by the dry bare steppes of interior Australia, which can never become of much value as habitable land.

The most valuable and important part of the colony lies along the *Flinders Range* of mountains, which extend from the eastern side of Spencer Gulf northward towards the salt basins of Lakes Torrens and Eyre. A large proportion of the land along these hill slopes has been already settled for cultivation, and here wheat and fruits of all European sorts, including the vine, grow in abundance. Large areas of pastoral land surround this hill country, and the hills themselves are rich in veins of copper, besides gold, silver, and bismuth. The long line of telegraph, which has been carried all across South Australia, leads through interchanging grass-land, bush, salt lagoons, and sandy desert, over the Macdonnell range of hills, in the centre of the continent, to the northern territory of the colony, a region which is as yet quite undeveloped, but which seems to be adequate to the cultivation of all tropical products.

24. **People and Government.**—South Australia, having never been a penal settlement, has come less under direct British control than the other Australian colonies. Its administration has been a wise and economical one. The executive is in the hands of the Governor and a council of five ministers: the Legislative Council serves for twelve years; the members of the House of Assembly are nominated for three years. The elements of population other than British are very small, excepting the German. The few remaining aborigines are well cared for. Perfect equality is given to all denominations, and there is no State aid to any religious body.

25. **Chief Towns.**—The capital city of *Adelaide*, the only important town of the colony, is built on the eastern coast-land of the Gulf of St. Vincent, eight miles from its seaport, and six from *Glenelg*, a favourite watering-place and mail station. A railway has been carried inland from it for more than 120 miles. *Wallaroo*, on Spencer Gulf, is the port of the copper mines of *Moonta* and *Kadina*, on York peninsula. Other mining towns are *Kapunda* and *Kooronga* (with the Burra Burra mine), to the north of Adelaide. The chief settlement in the Northern Territory is that of *Palmerston*, at the entrance of the inlet of Port Darwin, on the north coast, where the over-land telegraph terminates.

WEST AUSTRALIA.

26. The colony of Western Australia includes all that part of the continent which lies west of the 129th meridian, so that it includes an area eleven times as large as Britain. Little, however, is yet known of this region beyond its coast-line and along one or two tracks of explorers, who have crossed the dry sterile wastes which fill most of the interior.

27. The most important district, and that which has been occupied by the colonists, lies along the maritime slope of the hills on the south-west, where

a few small rivers descend to the Indian Ocean ; but the colony is not a prosperous one, partly on account of its natural disadvantages, partly because it was made the chief penal settlement, after deportation to the other Australian colonies had ceased.

28. Its chief town of *Perth* lies on the left bank of the *Swan River*, which formerly gave its name to the whole territory. Its port on the coast is *Fremanle*. *Albany*, on King George's Sound, is the coaling station of the mail steamers.

TASMANIA.¹

29. The island which was first called Van Diemen's Land, and afterwards, from its discoverer, Tasmania, is somewhat smaller than Ireland, being about 150 miles wide each way. It is separated from Victoria and the mainland of Australia by Bass Strait, which can be crossed in a day's steamer passage.

30. **Physical Features.**—Its bold coasts are indented with bays and inlets, which form fine harbours. Inward the island rises to elevated downs, surrounded by high mountain ranges, some of which present a wild and stern aspect. The highest point of the island, named Cradle Mount, is 5069 feet high, but there are a number of summits which exceed 4000 feet in elevation. Streams and lakes are numerous in the mountain valleys, the largest rivers being the *Tamar*, which flows northward, and the *Derwent*, which descends south-eastward to the inlet upon which the capital town is placed.

31. **Climate and Vegetation.**—The climate may be said to resemble that of England, though the summer heat is occasionally greater than is experienced here, especially when the island is reached at times by a blast of hot air from the deserts of Australia. The winter cold forms thin ice on the lowlands, and then the higher ranges are snow-clad. The western side of the island, exposed to the prevailing westerly winds from the southern ocean, is very wet, but the eastern has a rainfall that does not exceed that of the east coast of England. Tracts of forest, containing trees of great size, such as the durable thorn pine, myrtle wood, and blue gum, cover large parts of the island, and elegant tree ferns, besides a great variety of smaller ferns, fill the glens. Where the island is cultivated, its hedged fields and orchards beside the villages remind one of England. The native animals of the island are to a great extent similar to those of the mainland of Australia. Iron, tin, and coal are widely distributed.

32. **People and Government.**—The inhabitants of Tasmania are almost exclusively of British origin. The aborigines, who resembled the Australians in their customs and mode of life, though they were of shorter stature, stronger physique, and darker complexion, have now become extinct. Agricultural rather than pastoral industries employ the colonists of Tasmania ; a large number are employed in the South Sea whale fisheries. Education is compulsory on all ; religion is unfettered. The colony became independent of New South Wales in 1825, and thirty years later received responsible government, like the other Australian colonies.

33. **Chief Towns.**—The two important towns of Tasmania are *Hobart Town*, the capital, on the right bank of the estuary of the Derwent, in the

	Area in sq. m.	Population.
1 Tasmania	26,200	115,700

south-east, and *Launceston*, on the Tamar, near the north coast. These two outlets of the island rival one another in trade, which is promoted by railway, and excellent roads through the island. Wool, timber, hops, oil, and fruits, are the leading exports.

NEW ZEALAND.¹

1. At a distance of about 1200 miles south-east of the mainland of Australia lie the islands of New Zealand. They are nearly at the antipodes of our islands of Britain, or a line drawn through the centre of the globe from England would come out near them on the other side of the world. The group consists of two large islands, a northern and a southern, and of several smaller ones, of which Stewart Island, to the south, is the most important. The extent of the islands together is somewhat less than that of the United Kingdom.

2. *Physical Features*.—The *North Island* (once called New Ulster, and by the natives *Te ika a Maui*, or “the bird of the Maui”) is of less compact form than the southern, and runs out in long peninsulas. Nor is it so generally elevated as the southern, though it contains high summits. Parallel ranges, of which that named *Ruahine* is the chief, extend along its maritime borders on the south-east, and attain heights of over 2600 feet. In the centre of the island rises a volcanic group, in which are *Mount Ruapehu*, 9195 feet, and the active volcano of *Ngaurahoe*, between it and *Tongariro*, 7000 feet. On a western promontory *Mount Egmont* stands alone, its conical snow-clad summit having an elevation of 8270 feet.

The *South Island* (formerly known as New Munster, or Middle Island, or by its native name of *Te wahi Punamu*, “the place of greenstone”), separated from the northern by *Cook Strait*, is almost covered by the high range called the *Southern Alps*, which rises to greatest height on the western side of the island, following its whole length, forming high-walled fiords on the western coast, and reaching down in spurs eastward to the maritime plains. The highest point among the many peaks of this magnificent glacier and snow-clad range is *Mount Cook*, 13,200 feet high, near the centre of the chain; *Mount Franklin*, on the north of it, is 10,000 feet, and *Mount Aspiring*, towards the south, 9940 feet high. The Tasman glacier, depending from Mount Cook, is larger than any of those found in the Swiss Alps. Almost the only level district in the South Island is the *Plain of Canterbury*, which reaches along the eastern maritime border for about 100 miles, having an average width inland to the base of the mountains of 20 miles. *Stewart Island*, in the extreme south, which may be compared to an English county in size, is also mountainous.

Both islands have many rivers and lakes. The Northern Island has a large central lake named *Taupo*, 36 miles long, from which the *Waikato* river flows to the west coast; the *Wanganui*, flowing southward to Cook Strait, is the other important river of the North Island. Hot-water lakes and geysers, far surpassing those of Iceland in size, abound in the central volcanic group. The South Island has a series of fine rivers on its eastern slope, such as the *Wairau* in the north, the *Waitaki* and the *Clutha* in the south. Its steep western water-

	Area in sq. m.	Population.
¹ New Zealand	104,280	477,000

shed has only small streams, though these are very numerous. In the southern mountain region of the South Island there are many alpine lakes of great depth.

3. Climate and Products.—In general the climate of New Zealand resembles that of the British Isles. The North Island has a warmer and more equable, the South a cooler and more variable, climate, rough and bracing. The western sides of both islands receive by far the larger share of rainfall. Forests of lofty pines and other evergreen trees, tree ferns, and vegetation matted together by the rope-like "smilax," occupy a large share of the North and some parts of the South Island. Other parts are overgrown with ferns breast high, and others are well adapted for pasture.

Though New Zealand has no indigenous quadrupeds, the plains of the South Island are now so well stocked with sheep that wool has become one of the leading exports of the colony. The northern and eastern districts of the South Island are those best adapted for agriculture, and the cultivation of wheat, oats, and barley.

New Zealand is very rich in minerals; both in the North and South Islands gold-mining has become a settled and productive industry. Silver, iron, copper, and tin are also found, though not yet extensively worked. Coal of good quality abounds, and the petroleum is equal to that of America.

4. People and Government.—At the time of their first exploration by Captain Cook the islands were all peopled by the *Maoris*, a race presenting far higher physical and mental development than any other in all this Oceanic region. During the progress of the British colonisation and occupation of the islands, the contests with the Maoris have been long-continued and severe, and throughout their wars the natives have shown themselves brave and skilful. Their numbers are now reduced to about 44,000, the greater part of them living peaceably in the North Island; and the European colonial population is now six or seven times as numerous.

A Governor appointed by the Crown holds the executive power, and is aided by five ministers. The legislative body consists of a Council nominated by the Governor, and of an elected House of Representatives which includes several Maori members.

A system of railways connecting the chief places in the islands was begun by Government in 1872.

5. Chief Towns.—The parliament of New Zealand meets now at the small town of *Wellington* on the south coast of the North Island. This meeting-point was found more convenient than *Auckland*, the largest town of the colony, which lies on the narrow isthmus that leads to the long north-western peninsula of the North Island, between Hauraki Gulf and the harbour of Manukau. *Napier*, on Hawke Bay, and *New Plymouth*, at the foot of Mount Egmont, are the only other remarkable towns of the North Island.

Dunedin, at the head of the inlet called the Harbour of Otago, on the east coast, is the most considerable town of the South Island. *Christchurch* is the main centre of population on Canterbury Plain, rich in wheat, meat, and wool, with *Lyttelton* for its principal port. *Nelson*, at the bottom of Blind Bay, near the northern extremity of the island, is the outlet of the richest mining district. *Hokitika* is the most important town on the west coast.

5A. The *Chatham Islands* (628 sq. m.), 460 miles to the east of New Zealand, are hilly, and supply whalers with provisions. They are inhabited, which the *Auckland Islands* and *Campbell*, far to the south, are not.

POLYNESIA.¹

1. The name Polynesia, or the "many islands," is usually employed to include all those numerous islands and groups of islets in the wide Pacific, which are not included within the Australian or the East Indian Archipelagoes; but these remnants of former continents have been more conveniently classed under three subdivisions, viz.—Melanesia, Micronesia, and Polynesia.

2. **Melanesia** includes the largest islands, New Guinea, Admiralty Islands, New Britain, Solomon Island, New Hebrides, Santa Cruz Islands, New Caledonia, Loyalty Islands, and the Fiji Islands.

3. **Physical Features.**—Nearly all these islands rise to a considerable elevation; several amongst them are of volcanic origin, and many are almost encircled by coral reefs. The climate combines heat and moisture in a high degree, so that luxuriant green vegetation appears on almost every one of them. Most highly prized amongst the forest trees are those which yield sandal-wood. The coco-palm, bread-fruit tree, yam, sweet potato, and sugarcane, are amongst the most important food plants.

Mammals are scarce, being limited to the wild pig, marsupials, bats, mice, and an anteater; but this paucity is in some measure compensated by a great variety of birds of most gorgeous and beautiful plumage, including birds-of-paradise, confined to New Guinea and the neighbouring islands. The fauna grows poorer as we proceed eastward, and in the Viti Islands the only indigenous mammals are mice and bats. Our European domesticated animals have been successfully introduced.

4. **People.**—The bulk of the population consists of dark-coloured Papuans,² with frizzly hair, intermixed, in the west with Malays, in the east with light-coloured Polynesians. The Papuans keep dogs, pigs, and fowls, and cultivate the soil; but although their islands contain gold and copper, they were, until recently, unacquainted with the use of metals, and made use of stone implements.

5. *New Guinea*, the largest island in all Polynesia, has an area equal to more than thrice that of Great Britain. A lofty range of mountains, named at the west end *Charles Louis Mountains*, and at the east end *Owen Stanley Range*, traverses the island from north-west to south-east, attaining an elevation of over 13,000 feet. The northern coast is for the most part hills, but to the south of the spinal range, in the direction of Torres Strait, there spreads out a vast alluvial plain, traversed by the Fly and other rivers, covered with dense primeval forests, and fringed with mangrove swamps. The soil is exceedingly fertile, but the cultivated area small. The natives live in small villages, "kampongs," under headmen, who, however, exercise very little authority. Trade is limited to a few raw products, bartered by the natives with Malay traders.

		Area.	Population.
1 Melanesia ..	{ New Guinea . .	312,000 square miles	500,000
	{ Other Islands . .	56,300 " "	607,000
Polynesia ..	{ Sandwich Islands	6,600 " "	53,000
	{ Other Islands . .	3,800 " "	180,000
Micronesia		1,400 " "	85,000
		<u>380,100</u>	<u>1,380,000</u>

² From the Malay word *Papūwah* = frizzly hair; *Melanesians* = "dark-coloured islanders," as contrasted with the light-coloured Polynesians or Mahori.

6. *New Britain* includes a group of islands of volcanic formation, the inhabitants of which are cannibals. The *Solomon Islands* consist of a double row of mountainous volcanic islands, with an active volcano in Guadalcanal. The *New Hebrides* have five active volcanoes. *New Caledonia*, a long high island, stretching 200 miles from north-west to south-east, and almost encircled by a coral reef, belongs to France, and is used as a penal settlement. Nickel, gold, and copper are found; coffee, cotton, tobacco, indigo, and sugarcane are cultivated.

7. The most easterly group is that of the *Viti* or *Fiji Islands*. These were annexed to the British Empire in 1874. They lie about 2000 miles east of Australia, and consist of the two large and high islands of *Viti* and *Vanua*, which together form an area somewhat greater than that of Wales, and of about 300 smaller islands. *Levuka*, on a small island adjoining Viti, is the chief place in the group, exporting coco-nut oil and cotton.

8. *Micronesia* includes the small islands north of the equator, between 130° E. long. and 180°: Marshall Islands, Gilbert or Kingsmill Islands, Caroline Islands, Pelew Islands, and the Mariannes or Ladrone Islands.

9. These widespread islands, like those of Polynesia, are naturally divided into two classes—the mountainous islands, which are always volcanic, and the low coral islands. The latter are generally circular in form, consisting often of a low reef, which encloses a lagoon connected with the ocean by one or more openings. Such are termed *atolls*. Most of the volcanic islands are also surrounded by coral formations at greater or less distances from the island, which in that case are termed *barrier reefs*.

10. The Marshall and Gilbert Islands are, without exception, flat coral islands or atolls. The fruit of the pandang and coco-nuts, together with fish and turtles, form the staple of food. The remaining islands of the group belong to Spain. *Ponape*, a thickly-wooded basaltic island in the Caroline archipelago, is remarkable on account of huge stone structures of unknown origin. *Guam* or *Guahan*, one of the Mariannes, is the largest island of all Micronesia, though only 198 sq. m. in extent. Several active volcanoes are met with in this group.

11. *Polynesia* includes all the remaining islands of the Pacific from the Tonga or Friendly Islands eastward to Easter Island, and north-eastward to the Sandwich Islands.

Here, as in Micronesia, we distinguish between low coral islands and lofty volcanic islands, generally encircled by coral reefs. The products are similar to those of Micronesia, and become less varied in proportion as we travel eastward. The only indigenous terrestrial mammals are mice, a bat, and perhaps the dog and pig.

12. *People*.—The brown Polynesians, or Mahori,¹ have struck all observers by their physical beauty, cheerfulness, and peaceable disposition. Their island life has made them, for the most part, a seafaring race, and they display great skill and boldness in canoeing. Though warlike, they offer no human sacrifices like their neighbours the Melanesians, and cannibalism

¹ Derived from the Maoris of New Zealand, who are of the same race.

occurs but rarely amongst them. When first discovered they had no written language, were unacquainted with metals, and had not learnt to make pottery. But in carving their canoes and weapons, and in the manufacture of bark cloth and mats, they exhibited considerable taste. On all the islands they have decreased greatly in numbers as they have gradually come more closely in contact with the white race.

13. The *Tonga* or *Friendly Islands* are all of coral formation, with the exception of several active volcanoes. The *Samoa* or *Navigator's Islands*, on the other hand, are all lofty. They are fertile, producing cotton, coffee, maize, coco-nuts, and other produce for exportation.

14. The *Society Islands*, lofty, fertile, and volcanic, out in the centre of the South Pacific, belong to France. The largest island, *Tahiti* (7339 feet) has acquired celebrity from the extreme beauty of its mountain valleys and cascades. *Papeete*, the capital, carries on a brisk trade in coco-nuts and mother-of-pearl, chiefly procured from the archipelago of low coral islands to the east, known as *Tuamotu* ("cloud of islands") or *Paumotu*. Among the scattered islands to the south of these low islands, that named *Pitcairn* is of interest as having been the refuge of the mutineers of the ship "Bounty," who formed a European colony there in the latter part of last century, which still survives. Still farther east, a mere speck in the ocean, lies *Easter Island*, noteworthy on account of its remarkable remains of some prehistoric people.

The *Marquesas Islands*, lofty and of volcanic origin, to the north of *Tuamotu*, also belong to France.

15. Among those north of the equator the *Hawaii* or *Sandwich Islands* are by far the most important. There are eight larger islands in the group including Hawaii proper, the largest island in the open Pacific, which rises to a height of 13,760 feet in its towering volcanic summit, named *Mauna Loa*; and which also contains the great crater of *Kilauea*, the floor of which resembles a lake of fire. The natives of the Sandwich Islands have been brought to considerable advancement in civilisation by their long intercourse with Europeans, of whom there are considerable numbers settled in the group. They have adopted a monarchical form of government, united by an elected assembly, and, with the aid of the American missionaries, their language has been reduced to written forms. The commerce of the group in sugar, rice, coffee, "pula" or vegetable silk, wool, and sandal-wood, now extends to all parts of the Pacific.

Honolulu, the capital of the group, on the island of Oahu, is the largest town of all Polynesia, and is regularly built in streets and squares.



INDEX.

AACHEN, 117
Aalst or **Alost**, 137
Aar river, 129
Aared mountains, 270
Aargau, 131
Ababdeh Arabs, 299
Abana river, 272
Abeshr, 309
Abetas, 256
Abkhasians, see **Caucasians**
Abo, 178, 307
Aboe mountain (vol.), 255
Abomey, 307
Abraham, **Plains** of, 338
Abruzzi, the, 157
Absolute height, 45
Abu mountain, 228
Abuam, 291
Abullonia lake, 272
Abysinnia, 280, 302
Abysinnians, 278, 287, 303
Acacia forests, 306
Acadians, 339
Acapulco, 353
Achin, 352
Aconcagua mountain, 328, 367
Acre (**Akka**), 275
Acropolis, the, 163
Adalia, 275
Adamawa, 308
Adam's Bridge, 240
Adam's Peak, 241
Adana Plain, 272
Adarbaijan, 267
Adda river, 153
Adelaide, 379
Adelberg, 126
Aden, 279
 gulf of, 297
Aderer, 296
Adige river, 153
Adigerat, 304
Admiralty Islands, 283
Adowa, 303
Adria, old port of, 153
Adrianople, 173, 175
Adriatic Sea, 76
Adyrnus river, 271
Ægean Sea, 78, 159
 islands of, 268
Ægina, gulf of, 160

Ægina Island, 160
Afar, 301, 302
Afghanistan, 184, 257
Afghans, 193, 260
Afghan Turkistan, 260, 261
Africa—
 animals of, 266
 climate of, 285
 diamond fields of, 286
 Eastern, see **Eastern Africa**, 311
 extent of, 280
 falls of, 282
 fevers of, 285
 government of, 288
 hydrology of, 285
 islands round, 325
 kloofs and wadis of, 282
 lakes of, 282
 mangrove swamps of, 285
 mineral wealth of, 286
 mountains of, 280
 mountain ranges of, 48
 "oil rivers" of, 307
 people of, 68, 286
 Portuguese East, 314
 products of, 286
 relief of, 280
 religion in, 287
 rivers of, 282
 salt marshes in, 281
 slavery in, 288
 South, see **South Africa**, 316
 volcanic belts in, 281
Afridia, 260
Agades, 296
Aghri Dagb, mountain, 269
Agra, 236, 239
Agram, 124, 128
Agua mountain (vol.), 358
Agulhas, Cape, 280
Ahaggar Tuaregs, 296
Ahmadabad, 238
Aidin, 271, 275
Ainos, the, 192, 225
Ajmir, 237
Akaba, gulf of, 297
Akhyr Dagb, 269
Akmolinsk, 202

Akyab, 243
Aland Islands, 77
Alantika, mount, 281, 304
Alaska peninsula, 329, 343, 344
Ala Tau mountains, 183, 188
Albania, 79, 169
Albanian Gate (Pass), 197
Albanians, 161, 168
Albany, 349, 380
Albay (vol.), 256
Albert Lake, 301
Albert Nyanza, 282, 298, 301
Aleppo, 275
Aleutian Islands, 329, 343
Alexandretta, 275
Alexandria, 299
Alexandropol, 199
Alexandrovsk, 203
Algeria, 288, 291
Algiers, 292
Algoa Bay, 319
Alicante, 149, 150
Alindshi Dagb, 269
Allahabad, 236
Alleghany mountains, 329, 344
 city, 349
Allen lough, 93
Alma Dagb, 269
Aloe plant, 326
Aloes, wood, 246, 247
Alost or **Aalst**, 137
Alpaca wool, 364
Alps, the **European**, 78, 122, 128, 138, 153
Alsace, 121
Altai mountains, 188, 200
 valley, 185
Altamaha river, 344
Altona, 117
Amadeus lake, 374
Amager Island, 108
Amanus Chain, 269
Amasondo Kafir, 319
Amarapura, 245
Anasias, 355
Amazon river, 330, 359, 362
Amazons of **Dahomey**, 307
Ambassi, 310
Amboyana Island, 256
Ambriz, 310, 311

Ameland, 132**America—**

- animals of, 331
- climate of, 330
- education in, 333
- extent of, 323
- government of, 334
- lakes of, 330
- landscape of, 330
- minerals of, 332
- peoples of, 332
- plants of, 331
- relief of, 48, 328
- religion of, 333
- rivers of, 330

Amhara, 303**Amherst, 243****Amiens, 141****Amoy, 209****Ampanam, 255****Amritsar, 237****Amstel river, 132****Amsterdam, 132, 134****Amu river, 202, 263****Amu Daria river, 188****Amur river, 186, 200, 201****Amur valley, 184****Anamalli mountains, 229****Anamba Islands, 252****Ancona, 157, 158****Andalusia, 149****Andes mountains, 328, 358,****364, 367, 368****Andkhui, 259, 262****Andorra, 151****Angara river, 185****Angers, 142****Anglesey, isle of, 89****Angola, 310****Angola, 303****Angora goats, 274, 275****Angosha or Angoxa, 314****Angoy, 309****Angra Pequena Bay, 324****Anguilla Island, 356****Anhalt Duchy, 118****Anholt Island, 108****Animals, distribution of, 63****Aniyo, 309****Ankarat Hills (vol.), 325****Ankober, 303****Annam, 242, 247****Annamese, 247****Annobon Island, 281, 309****Antananarivo, 326****Antarctic circle, 41****Anticosti Island, 343****Antigua Island, 356****Antilles, Greater and Lesser,****355****Antioch, 272****Antisana mountain, 359****Anti-Taurus, 269****Antivari, 171****Antombuk Bay, 326****Antwerp, 137****Anzali, 266****Apa river, 370****Apennines, mountains, 79,****153****Aphelion, position of, 37****Appalachicola river, 345****Appenzell, 131****Apsheron Cape, 75****Apulia, 157****Arabia, 275****Arabistan, 267****Arabkir, 275****Arabs, 265, 274, 278, 290, 292,****298, 299****Aracanes, 192*****Arachis hypogaea*, 309****Arafura Sea, 373****Araguaya river, 362****Aragon, 149****Arakan, 243****Aral lake, 188****Aral Sea of, 203****Aras river, 198, 271****Ararat, Mount, 184, 198, 268,****269****Araucarians, 367****Aravali Hills, 238****Araxes river, 198, 271****Arcadia, bay of, 160****Archangel, 82, 180****Aroot, 238****Arctic Circle, 41****Arotos, the bear, 24****Ardalan, 267****Ardennes mountains, 79, 135****Arenas Gordas, 145****Arequipa, 365****Argens mountain, 269****Argali (sheep), 219****Argentine Republic, 368****Argun river, 186****Art, province of, 221****Arica, 365****Arijish Dagh, 269****Arkansas river, 345****Armagh, 99****Armenia, 267****Armenia, mountains of, 184,****198****Armenia, Russian, 271****Armenians, 168, 177, 193, 198,****273****Arnavats, 168****Arno river, 153****Aroa, 360****Arran, isle of, 89****Arru Island, 108****Arta, gulf of, 159****Aru Islands, 256****Aryan race, 67, 84, 192, 287****Asama Yama Mountain, 222****Ascania, lake, 272****Ascension Island, 327****Asgar, 296****Ashantee, 307****Ashantees, 307****Ashurada Island, 203, 266****Asia—****animals of, 182, 191****area of, 181****boundaries of, 181****British power in, 196****Chinese, 203****civilisation in, 196****Asia, climate of, 189****features of, 190****food plants of, 191****forest zone of, 182****highlands of, 183****hydrology of, 185, 188****lowlands of, 181****Minor, 267****Mohammedan, 257****mountain ranges, 48****peninsulas of, 181****peoples of, 192****poultry of, 191****products of, 191****religion in, 193****rivers of, 185****Russian power, 202****Russian central in, 196****Tundra region of, 182****vegetation of, 184, 191****volcanic heights of, 184****Asiatic Turkey, 267****Aspinwall, 258****Aspiring, mountain, 381****Aspropotamo river, 160****Assab Bay, 302****Assam, 236, 240****Assamese, 233****Assiniboine river, 341****Assinie, 306****Assuan, 25, 300****Assuan Cataract, 282****Astrabad, 267****Astrakhan, 177, 178, 180****Astronomical day, 34****Asturian Mountains, 145****Asturias, 148****Asuncion, 370****Atacama, 367****Atbara river, 282, 298, 302****Athalasca, lake, 330, 340****river, 340****Athens, 161, 163****Athos, Mount, 166****Atlantic plain, 344****Atlas range, 281, 288****Atmospheric currents, 53****"Atolls," 384****Atrek river, 203, 264****Attar of roses, 237, 298****Attock, 234, 237****Auckland, 382****Aughrabies Falls, 284****Augsburg, 119****Aurangabad, 239****Aures Mountains, 289****Australia, 373****Austral Islands, 382****Austria, 125****Austria and Hungary, 121****Auvergne mountains, 79,****138****Ava, 245****Avares or Huns, 123****Avon river, 92****Awe, Loch, 92****Axum, 303****Ayashin, Jebel, 289****Aymara Indians, 366****Ayuthia, 246**

- Azamor, 291
 Azores, the, 151, 152

 BABA DAGH, Mount, 269
 Babylonia, 267, 268
 Back river, 340
 Bactria, 262
 Bactrian camel, 191
 Badajoz, 148
 Badakshan, 261
 Baden, 120
 Baden-Baden, 121
 Baffin Bay, 335
 Baffin Strait, 334
 Bagamoro, 393
 Bagdad, 275
 Baggara Arabs, 299
 Baghirmi, 308
 Bahia, 363
 Bahamas, 355, 356, 357
 Bahr-el-Abiad river, 282, 300
 Bahr-el-Azrek river, 282
 Bahr-el-Benât Islands, 278
 Bahr-el-Ghazal river, 282
 Bahr-el-Huleh lake, 272
 Bahr Ldt, 272
 Bahr Nedjef lake, 272
 Bahr Tubariyah lake, 272
 Baikai lake, 183, 185, 200
 Baku, 199
 Bakony Wald Mountains, 122
 Bala lake, 92
 Balaton lake, 122
 Balearic Islands, 149, 150
 Bali Bay, 326
 Bali Island, 255
 Balkan Mountains, 79, 166, 173
 Balkan Peninsula, 165
 Balkash lake, 188
 Balkh, 259, 260, 262
 Ballarat, 377
 Baltic provinces, 178
 Baltic Sea, 76, 102, 103
 Baltimore, 348
 Baltistan, 237
 Baluchis, 193, 258, 278
 Beluchistan, 257, 265
 Bembarra, 308
 Bamian, 261
 "Bam-i-dunia," 183
 Bamo, 245
 Banana (Factory), 310
 Banca Island, 252
 Banda Oriental, see Uruguay, 371
 Bandar Abbas, 266
 Bangalor, 317
 Bangermassin, 254
 Bangkok, 186, 246
 Bangweolo Lake, 283
 Banians, 278
 Banken Veldt, 321
 Bann river, 93
 Bantam, 253
 Bantus, 68
 Banyu Iuka, 172
 Banyans, 301
 Barabinsk Steppe, 182
 Baranov Island, 343
 Baranquilla, 358
 Barbadoes, 356, 357
 Barbary States, 281, 288
 Barbuda Island, 356
 Barca, 281, 288, 294
 Barcelona, 150
 Barcoo Creek, 378
 Bardai, 296
 Bardo, 293
 Barfrush, 266
 Barka, 279
 Barmen, 117, 324
 Barnaul, 201
 Barnsley, 98
 Baroda, 259
 Baroghil Pass, 262
 Barometer, 46
 Barotse, 284, 324
 Barquisimeto, 360
 "Barren Grounds," 340
 Barrier reefs, 384
 Barrow river, 93
 "Base-line," 26
 Basel, 130, 131
 Bashee river, 319
 Bashkirs, 176
 Basilicata, 157
 Basques or Vascones, 140, 147
 Basra, 275
 Bass Strait, 373, 380
 Bassein, 243
 "Bastards," 323
 Basutoland, 320
 Basutos, 320, 322, 323
 Bataks, 193
 Batanta Island, 256
 Batavi, 133
 Batavia, 253
 Batavians (Dutch), 132
 Bath, 99
 Bathurst (Africa), 305
 Bathurst (Australia), 376
 Batum, 198, 199, 271
 Bavaria, 119
 Bavarian Palatinate, 120
 Bayezid, 275
 Bechuanas, 320, 322, 323
 Bedwins, 193, 196, 276, 278, 292, 298
 Beirut or Beyrout, 275
 Beishehr Gol Lake, 272
 Belfast, 99
 Belfast Lough, 99
 Belge, Gallic, 136
 Belgium, 135
 Belgrad, 170
 Belize, 353, 354
 Belle Isle, Strait of, 342
 Belt, Great, 108
 Belt, Little, 108
 Benares, 236
 Bencoolen, 252
 Bendigo, 377
 Bengal, Lower, 326
 Bengali, 233
 Benghazi, 294
 Benguela, 310, 311
 Beni river, 366
 Ben Nevis, 89
 Ben Stack, 89
 Ben Wyvis, 89
 Berar, 237
 Berberah, 301
 Berbers, 288, 290, 292, 293, 294, 296, 300
 Berbice, river, 361
 Berdiansk, 180
 Bereyadah, 279
 Bercymah, 279
 Bergamo, 158
 Bergen, 106
 Bergen-op-Zoom, 134
 Berlin, 117
 Berlin, Treaty of, 1878, 163, 164, 169, 171, 172, 271
 Bermudas Islands, 257
 Bern, 130, 131
 Besançon, 142
 Bessarabia, 163, 180
 Bethany, 324
 Betsimasarakas, 325
 Beveland, 132
 Beyerland, 132
 Beypur, 238
 Beyrout or Beirut, 275
 Bhagalpur, 236
 "Bheels, 233
 Bhopal, 239
 Bhutan, 240
 Biafra, Bight of, 309
 Bias river, 187
 Biel or Bienne, 129
 Bielukha, mountain, 200
 Bien-hoa, Lake, 249
 Bienne or Biel, 129
 Bight of Biafra, 281
 Biharia Mountains, 122
 Bilbao, 150
 Billiton Island, 253
 Bilma salt mines, 296
 Bima, 255
 Bingöl Dag, 269
 Bintang Island, 252
 Binue river, 283, 304, 307
 Biobio river, 367
 Bir, 188
 Birket el Kerun, lake, 298
 Bisayas, 256
 Biscay, Bay of, 76, 138
 Biscaya, 148
 Biserta, 293
 Bisharin Arabs, 299
 Bissagos Archipelago, 305
 Bissao, 305
 Biwa, Lake, 223
 Black Dome Mountain, 329, 344
 Blackfeet Indians, 340
 Black Forest Mountains, 78
 Black Mountains, 90, 281, 294
 Black Sea, 76, 175
 Black Sea district, 199
 Blackwater river, 93
 Blanca Peak, 329
 Biantyre (Africa), 315
 Bloemfontein, 321

- Bloemhof, 322
 Blue Mountains, 344, 376
 Blue Nile River, 282, 302
 Blue Stack Mountains, 91
 Boccacio, 155
 Bodele, plain of, 285
 Boers, 322
 Bocotia, plains of, 160
 Bogos, 301
 Bogotá, 358
 Bohemia, 127
 Böhmerwald Mountains, 79,
 122
 Bohr, 301
 Bois-le-Duc or Hertogen-
 bosch, 184
 Bokhara, 262, 263
 Bokhara Pass, 262
 Bolan Pass, 257, 258, 259
 Bolivia, 323, 365
 Bologna, 155, 157
 Bolsena Lake, 153
 Bombay, 238
 Bomma, 310
 Bona, 292
 Bonaire or Buen Ayre, 356
 Bongos, 299
 Bonifacio, Strait of, 154
 Bonin Islands, 222
 "Boobies," 309
 Bora wind, 123, 154
 Bordeaux, 81, 140, 142
 Borneo Island, 253
 Bornholm Island, 103, 109
 Borneo, 308
 Bosnia, 79, 128, 165, 169
 Bosnia and Herzegovina, 171
 Bosnians, 168, 171
 Bosphorus Straits, 76, 167
 Boston, 348
 Bothnia, Gulf of, 102
 Botzen, 127
 Boulogne, 142
 Bourbon Island, 326
 Bourtanger Moor, 133
 Bowen Mountains, 374
 Boyana river, 167
 Boyars, 164
 Boyukdere, 175
 Brabant, 135, 138
 Bracciano Lake, 153
 Bradford, 98
 Bragança, 152
 Brahmaputra river, 187, 220
 Brahminism, 194
 Brahui tribes, 258
 Braila, 165
 Brava, 313
 Brazil, 330, 362
 Brazos river, 345
 Brecknock Beacon, 170
 Brede river, 317
 Breezes, land and sea, 53
 Bregenz, 127
 Bremen, 196, 198
 Brenner Pass, 127
 Breslau, 117
 Brest, 142
 Briançon, 142
 Brick tea, 201
 Bridgetown, 357
 Brie plain, 77
 Brienz, 129
 Brindisi, 158
 Brisbane river, 378
 town, 378
 Bristol, 98
 British Burmah, 242, 243
 Honduras, 353, 354
 Isles, 87
 foreign possessions of,
 102, 278, 279, 326, 372
 Columbia, 336, 361
 Guayana, 361
 North America, 334, 336
 Bruges or Brugge, 136, 137
 Bruni, 252, 254
 Brün, 127
 Brunswick, 118
 Brussels, 136, 137
 Bucharest, 164
 Buda-Pesth, 128
 Buddha, 194, 195
 Buddhism, 194, 195
 Buen Ayre, 356
 Buenos Ayres, 369
 Buffalo City, 349
 Bugia, 193, 255
 Bugo Channel, 222
 Bukovina, 124, 127
 Bulama Islet, 305
 Bulder Lake, 272
 Bulgaria, 165, 169, 172
 Bulgarians, 168, 176
 Bulghar Dagh, 269
 Bundelkhand, 229, 239
 Burdekin river, 378
 Bu Regreg river, 290
 Burgas, 173
 Burgos, 150
 Burgundy, 140
 Buriates, 192
 Burmah, 244
 Burmah, British, 242, 243
 Burmese, 192, 243
 Burmese Shans, 244
 Burnett river, 378
 Burra Burra, 379
 Bushire, 266
 Bushmanland, Plains of,
 317
 Bushmen, 287, 324
 Bush Veldt, 322
 Buyuk Mendere River, 271
 CABES, Gulf of, 293
 Cabul, see Kabul, 259
 Cacheo, 305
 Cadiz, 150
 Cadiz Bay, 145
 Cagliari Bay, 154
 Cairo, 298, 299
 Calcutta, 235, 236
 Caldera, 368
 California, 346
 Calabria, 157
 Calais, 142
 Calicut, 238
 Callao, 365
 Calycadnus River, 272
 Cambodia, 242, 249
 Cambodia River, 186
 Cambodians, 192
 Cambrai, 141
 Cambrian Mountains, 90
 Cameron, Lieutenant, 283
 Cameroons, Mountains, 281,
 304
 Cameroons River, 307
 Campagna, 153, 157
 Campbell, 882
 Campidano Plain, 154
 Campine, 136
 Campsie Hills, 90
 Canada, 336, 337
 Canary Islands, 149, 327
 Cancer, Tropic of, 39
 Candia Island, 247, 255
 Canes, 175
 Cannes, 142
 Canso, Gut of, 339
 Cantabrian Mountains, 79
 Canton, 206, 207
 Capanne, Cape, 154
 Cape Breton Island, 339
 Cape Coast Castle, 307
 Cape Colony, 316
 Cape de Verd Islands, 327,
 407
 Cape Fear River, 344
 Cape of Good Hope, 317
 Cape Town, 319
 Caprera, Isle of, 154
 Capri, Isle of, 154
 Capricorn, Tropic of, 40
 Carabane, 305
 Caracas, 360
 Caracoles mines, 366
 Cardamom Mountains, 230
 Cardiff, 98
 Cardinal points, 4
 Carduchi, the, 269, 274
 Caribs, 361
 Carintha, 126
 Carlingford Lough, 93
 Carlowitz, treaty of, 171
 Carlsruhe, 120
 Carmel, Mount, 270
 Carnatic Plain, the, 229
 Carniola, 126
 Carnsore Point, 89
 Carn Tual, 91
 Caroline Islands or Carolinas,
 384
 Carpathian Mountains, 79
 122
 Carpentaria, Gulf of, 373
 Carse, 91
 Carso, 126
 Cartagena, 150
 Carus River, 272
 Cascade Range, 329, 345
 Casiquiare River, 360, 362
 Caspian Sea, 76
 Cassange, 311
 Cassel, 117
 Castes in India, 195
 Castile, 148

- Castilian family, 147
Catalonia, 149
Cattaro, 128
Cattle Damaras, 324
Cauca River, 358
Caucasia, Cis and Trans, 199
Caucasian Gate (Pass), 197
Caucasians, 198
Caucasus, Lieutenancy of the, 197
Caucasus Mountains, 75, 79, 197
Caucasus (Russian), 197
Cawnpur, 236
Cayambe Mountain, 359
Cayenne, 361
Caymans, 356
Cayster River, 271
Cazamance River, 305
Cazengo, 311
Ceboroco Mountain, 352
Cebu Island, 256
 Town, 257
Celebes Island, 255
Celestial Mountains, 183
Celtic people, 85, 140
Cenis, Mont, 158
Central American States, 353
Central Asia, Russian conquests in, 202
Ceram Island, 356
Cetinje, 171
Cetywayo, 323
Ceuta, 150
Cevennes Mountains, 79, 138
Ceylon, 240
Chad, Lake, 285, 304
Chagos Archipelago, 242
Chakhara, 216
Chalons-sur-Marne, 141
Chambeze River, 283
Chamouny, Valley of, 78
Champa, 247
Champagne, 77, 140
Champlain, Lake, 337
Chandranagar, 240
Channel Islands, 89
Chapala Lake, 352
Chargut-cho Lake, 220
Charleroi, 137
Charles Louis mountains, 383
Charles's Wain, 7
Charlestown, 349
Charlotte Town, 340
Chart, Mercator's, 31
Charybdis, 158
Chatham Islands, 382
Che-foo, 209
Chelyuskin, Cape, 181, 199
Chemnitz, 118
Cherbourg, 142
Cherkeses, 168, 193, 198
Chernavoda, 165
Cheviot Hills, 90
Chibchas, 358
Chicago, 350
Chikishliar, 203
Chile, 367
Chilenos, 367
Chiltern Hills, 90
Chimborazo, mountain, 359
China, 183, 192, 196, 204
Chinab river, 187
Chincha Islands, 364
Chinese Empire, 203
Chios Island, 268
Chippeways, 338, 340
Chiquitos Indians, 366
Chitral Valley, 262
Chittagong, 236
Cholos, 364, 366
Choruk river, 198, 271
Chota Nagpur, 236
Christchurch, 382
Christiania, 103, 106, 108
Christianshaab, 335
Chui river, 188, 202
Chukchees, 192
Chu-kiang river, 206
Chupat river, 372
Chuquisaca, 366
Churchill river, 340
Chutia Nagpur, 236
Cilician Gates, 269
Cimbrian Peninsula, 108
Cimmerians' Territories, 22
Cincinnati, 350
Circassians, 168, 198
Cis-Caucasia, 199
Cis-Leithan Monarchy, 121
Citlattepetl Mountain, 352
Ciudad Rodrigo, 148
Civilisation, effect of climate on, 64
Clarence Cove, 309
Climate, causes which determine, 50
 continental, 52
 maritime, 52
Clutha river, 381
Clyde river, 92
 valley of, 91
Coanza river, 284
Coast range, 329
Cobijsa, 366
Cochabamba, 366
Cochin, 238
Cochin China, 186, 242, 247, 248
Coele Syria, 272
Cognac, 141
Coimbatore, gap of, 229
Colima mountain, 352
Cologne, 117
Colombo, 241
Colon, 358
Colorado river, 330, 345
Columbia river, 330, 345
 United States of, 357
Columbus, Christopher, 22
Comayagua, 354
Comeragh mountains, 91
Comino, 159
Como lake, 82, 153, 158
Comoro Islands, 326
Compass, 4
Compassberg mountains, 317
Concepcion, 368, 371
"Cone" projection, 31
Confucius, 195
Congo river, 288, 309, 314
Constantia, 318
Constantine, province of, 292
Constantinople, 73
Constanz, lake, 82, 123, 129
Continents, 43
Cook, Mount, 381
 Strait, 381
Cooktown, 378
Coolies, Chinese, 208
Coomassie, 307
Cooper Creek, 378
Coorg, 236, 237
Copenhagen, 110
Copernicus, 32
Copiapo, 368
Copts, 287, 298
Coquimbo, 368
Corcovado (vol.), 372
Cordillera Mountains, 328, 358
Cordova, 150
 (S. America), 368, 369
Corea, 184, 214, 226
Coreans, 192
Corentyn river, 361
Corfu island, 160
Corinth, gulf of, 159
 Isthmus of, 159
Corisco Bay, 309
Cork, 93, 99
Coromandel Coast, 227
Corrientes, 369
Corsairs, 291
Corso Island, 138
Corvo, Mount, 153
Cos Island, 268
Cossacks, 176
Costa, region of Peru, 264
Costa Rica, 353, 354
Côte d'Or mountains, 138
Cotopaxi mountain, 359
Cotswold Hills, 90
Cotton in Algiers, 292
Courtrai, 137
Coventry, 98
Cowrie shells, 242
Cracow, 124, 127
Cradle Mount, 380
Crees, 340
Creoles, 354, 352
Crete Island, 167, 175
Crimea, 180
Croagh Patrick mountains, 91
Croatia, 128, 171
Croats, 123, 168, 171
Crocodile river, 316, 321, 322
Cromarty, plain of, 91
Crossfell hill, 90
Crowther, Bishop, his mission station, 307
Cryolite, 335
Cuba, 356
Cuenca, 359
Cuilgach Mount, 91
Cunene river, 284
Curaçao Island, 356

- Currents, atmospheric, 53
 oceanic, 56
 Cutch, 238
 Cuttack, 236
 Cuyabá, 364
 Cuzco, 365
 Cyclades Island, 160
 Cyprus, 102, 268, 275
 Cyrenaica, 294
 Cyrus river, 198
 Czechs, 114, 123
 Czernowitz, 124, 137
- Dacca, 336
 Dacia, 164
 Daghestan, 196
 Dahomey, 307
 Dákar, 305
 Dalmatia, 122, 124, 128
 Damara Kafirs, 324
 Damaraland, 324
 Damaras, Cattle, 324
 Damascus, 275
 Damaun, 240, 260
 Damietta, 299
 Danakil, 301, 302
 Danger Point, 376
 Danha desert, 276
 Danish Greenland, 108
 Dante, 155
 Dantzic, 117
 Danube, province of the, 172
 river, 81, 122, 164, 165
 167
 Dardanelles Straits, 76, 166
 Dardania, 175
 Dar Fur, 297, 300, 309
 Daria river, 218
 Darel Pass, 198
 Darjiling, 236
 Darling hills, 374
 Darling river, 374, 376
 Dar-es-Salaam, 313
 Dartmoor Heights, 90
 Davis Strait, 354
 Day and night, 38
 astronomical, 34
 lunar, 55
 sidereal, 35
 solar, 35
 Dead Sea, 272
 valley, 270
 Deccan, 183, 184, 229
 Decken, Baron Von der, 284
 Dee river, 92
 Deer lake, 330, 340
 Dehas river, 259, 262
 Dehli, 256
 Delagoa Bay, 315, 316
 Delaware river, 344
 Delgado, cape, 314
 Delhi, 237
 Dellys, 292
 Delos, Island of, 160
 Demavend mount, 184, 264
 Dembea, lake, 302
 plain, 303
 Demerara river, 361
 Deniliquin, 376
- Denmark, 108
 Depths, measurement of, 46
 Derbend, 199
 Derby, 98
 Derg Lough, 93
 Derryveagh mountains, 91
 Derwent river, 92
 Derwent river, Tasmania, 680
 Desaguadero river, 366
 Desertas Islet, 327
 Despoto Dagh, 166
 Detroit, 350
 Devonport, 99
 Diamantina, 363
 Diamond fields, 323
 Diamonds, Cape, 286
 Diana's Peak, 329
 Dibong river, 187
 Dijon, 141
 Dilolo, lake, 284
 Dinding, 250
 Dinkas, 299
 Direction and distance, 3
 Disco Island, 335
 Distance and direction, 3
 Distribution of animals, 63
 of land and sea, 42
 Diu, 240
 Dividing Range, 374, 377
 Divriki, 275
 Diyaleh river, 271
 Djokjokarta, 253
 Dnieper river, 81, 176
 Dniester river, 81, 122
 Doabs of the Panjab, 228
 Dobruja, 84, 163, 166
 Dodadze mountain, 229
 Dogger Bank, 87, 134
 Dominica Island, 356
 Don river, 81
 Dongola, 300
 Dordogne river, 139
 Dormitor mountains, 166
 Dorpat, 177
 Dortrecht, 134
 Dost Mohammed, 261
 Douai, 141
 Dover Strait, 88
 Dovre field, 80
 Draa Wady, 295
 Dragon's Blood, 326
 Drakenberg mountains, 281,
 316, 317, 320
 Drave river, 122, 126
 Dravidian group of languages,
 192
 Drenthe, 135
 Dresden, 118
 Drin river, 167
 Dublin, 99
 Bay, 93
 Duero river, 81, 146
 Dufli, 301
 Dulce river, 253
 Dulcigno, 171
 Du Midi Canal, 139
 Düna river, 82
 Duncansby Head, 88
 Dundalk Bay, 93
 Dundee, 99
- Dunedin, 382
 Dunes, 109
 Dunkerque, 142
 Dunnet Head, 88
 Durani, 260
 Durban, 320
 Durdan Dagh, 269
 Durra or millet, 296
 Düsseldorf, 117
 Dushtistan, 265
 Dvina river, 82
 Dyaks, 254
- EAGLE wood, 246, 247
 East Cape, 181
 East India Company's Is-
 lands, 278
 East India Islands, 250
 East London (Cape Colony),
 319
 Easter Islands, 385
 Eastern Africa, 311
 Roumelia, 165, 169, 172
 Sea, 205
 Turkistan, 218
 Ebro river, 81, 146
 valley of, 145
 Ecuador, 358
 Edinburgh, 99
 Egedesminde, 335
 Egerdir Lake, 272
 Eggs, 307
 Egmout, Mount, 281
 Egypt proper, 297, 299
 Egyptian Dominion, 297
 Soudan, 297, 298
 Egyptians, 287
 Eifel mountains, 79
 Einsiedeln, 130
 Elba, Isle of, 154
 Elbe river, 81, 114, 117, 122,
 127
 El Bukaa Vale, 272
 Elburz range, 80, 184, 197,
 259, 264
 El Dabbah, 300
 Elevation and heat, 51
 El Ghor, 272
 Elizabetpol, 199
 Ellice Islands, Polynesia, 383
 Elmina, 307
 El Obeidh, 300
 El Sejah, 270
 Elysian fields, 22
 Embomma, 310
 Emilia, 156
 Eminah, Cape, 166
 Engadin, 129
 England, see British Isles
 English Channel, 75, 88
 Enns, 125
 Epheus, 271
 Ephraim, Mountains of, 270
 Epirus, 169, 175
 Equator, 27
 Equatorial regions, 41
 Equinox, 89
 Eratosthenes, the astrono-
 mer, 25

- Erdosh Dagb, 269
 Erfurt, 117
 Ericht, Loch, 92
 Erie, Lake, 330
 Erivan, 199
 Erne, Lough, 93
 river, 93
 Erris Head, 89
 Erz Gebirge mountain, 78
 Erz mountains, 122
 Erzincan Plain, 269
 Erzincan, 269
 Erzrum, 269, 275
 Escant river, 136
 Eskimos or Skrellings, 69,
 333, 343
 Esparto grass, 292
 Esmeralda river, 359
 Essequibo river, 361
 "Estancias," 371
 Esthonians, 176
 Estrella, Sierra da, 145
 Estremadura, 143
 Etas, 256
 Etna, Mount, 80, 153
 Etruscans, 155
 Etsch river, 153
 Et Th Desert, 270
 Eubœa Island, 160
 Eucalyptus in Algiers, 292
 in Australia, 374
 Euphrates river, 82, 188, 269,
 270
 Eurasia, 75
 Europe, 75
 European Russia, 175
 Euscar, 147
 Euxine, 76
 Evaporation, 59
 Everest, Mount, 46, 183
 Exmoor Heights, 90
 Eyre, Lake, 374, 379
 Eyoon, 279
- FAIR HEAD, 91**
 Fairweather, Mount, 329
 Falashas, 303
 Falkland Islands, 372
 Falster Island, 108
 Famagusta, 268
 Famaka, 300
 Families of mankind, 67
 Fans, 309
 Fantis, 307
 Farewell, Cape, 334
 Farin, 305
 Farøe Islands, 108, 111
 Fars, Mountains of, 184
 Farsistan, 267
 mountains, 264
 Fasher, 301
 Fashoda, 300
 Fatiko, 301
 Fayum, 298
 Fazokl, 300
 Fellabeen, 298
 Fellatah, 287, 306
 Fen District, 90
 Feng-shui superstition in
- China, 208
 Fernando-Po, 281, 309
 Ferro Island, 827
 Fez, 291
 Fezzan, 288, 294
 Fichtel Gebirge mountains,
 78
 Fiji Islands, 383, 384
 Fingo Kaffrs, 319
 Finland, 77, 102, 177, 178
 gulf, 76
 lakes, 82
 Finns, 85, 105, 176
 Finsteraarhorn mountain, 129
 Fish River, Great, 317
 Fitzroy river, 378
 Fiume, Port, 128
 Flanders, 138
 Flemings, 133, 136
 "Flevo" lake, 132
 Flinders Range, 374, 379
 river, 378
 Florence, 155, 157, 158
 Floris Island, 255
 Fohn Wind, 84
 Fo-kien Canal, 205
 Fontainebleau, 140
 forest, 140
 Formosa Island, 205
 Fort Garry, 341
 Hope, 342
 York, 340
 Fortunate Island, 327
 Foucault, 33
 Fowetra, 301
 Foyle river, 93
 France, 138
 foreign possessions of,
 240, 242, 248, 249, 326,
 356
 Franconia, 120
 Frankfort, 117
 Frankincense, 278, 311
 Franklin, Mount, 381
 Fraser river, 341
 Fray Bentos, 371
 Fredericton, 339
 Frederikshaab, 335
 Frederiksthal, 335
 Freemantle, 380
 Freetown, 305
 Freiberg, 118
 Freiburg, 120
 Frere Town, 313
 Fribourg, 131
 Friendly Islands, 385
 Friesland, 135
 Frieslanders, 133
 Frigid zones, 41
 Frio, Cape, 309, 316
 Frisij, 133
 Fu-chow, 206, 209
 Fuegians, 272
 Fuego Volcano, 353
 Fuerteventura Island, 327
 Fulbe, the, 287, 306
 Fumbina, 308
 Funchal, 327
 Fundy, bay of, 339
 Fünen, 108
- Fushan, 215, 226
 Fusi Yama (vol.), 184, 222
 Futa Jallon mountains, 304,
 308
 Fyen Island, 108
- GABES, Gulf of, 289**
 Gaboon, 309
 Gairdner lake, 374
 Galápagos Islands, 359
 Galata, 174
 Galatz, 164, 165
 Galdhøppig, 80
 Galeka Kaffrs, 320
 Galicia, 124, 127, 147, 148
 Galilee, hills of, 270
 lake of, 272
 Gallas, 303, 311
 Gallo, 242
 Gallegos, 147
 Gallic Belge, 136
 Sea, 76
 Gallinas Cape, 329
 Gallinhas Islet, 305
 Gallipoli, plain of, 166
 Galty mountains, 91
 Galway Bay, 93
 Gama, Vasco de, 313
 Gambia river, 283, 304, 305
 Gauntoos river, 317
 Gand, 136
 Gandamak, treaty of, 261
 Gandava, 258
 Gando, 307, 308
 Ganges river, 183, 187, 238
 Gangotri, temple of, 187
 Garda lake, 82, 153
 Garrone river, 81, 139
 Gartokh, 221
 Gasa country, 323
 Gata, Sierra de, 145
 Gateshead, 98
 "Gauchos," 369
 Gauhati, 236
 Gauritz river, 317
 Geba river, 305
 Gediz river, 271
 Geelong, 377
 Gelderland, 135
 Genargentu, Mount, 80, 154
 Geneva, 130, 131
 lake, 82, 129
 Genghiz Khan, 216
 Gennesareth lake, 272
 Genoa, 156, 158
 gulf of, 76, 155
 Geography, definition of, 3
 historical, 12
 Geomancy in China, 208
 George, lake, 376
 Georgetown, 361
 Georgians, 193, 194, 198
 German Empire, 113
 Geronas Pass, 143, 150
 Ghadames, 294
 Ghats of India, Eastern and
 Western, 184, 229
 Ghazni, 261
 Ghent, 136, 137

- Ghisour, the, 194
 Ghilan, 267
 Ghilzais, 260
 Ghisnevices dynasty, 261
 Ghoorkas, 239
 Ghurian Range, 294
 Giant Hills, 79
 Giant's Causeway, 91
 Gibbe Klaiik, 324
 Gibraltar, 76, 102, 145, 151, 289
 Gijon, 150
 Gilbert Islands, 284
 Gilead mountains, 270
 Gilolo Island, 256
 Ginseng root, 214
 Gippeland, 377
 Giron, 213
 Gironde river, 81, 139
 Gizeh Pyramid, 300
 Giarus, 129, 131
 Glasgow, 99
 Glenselg, 379
 Glen More, 89
 Globe, artificial, 29
 axis, 38
 circumference and diameter of, 27
 distance from sun, 35
 distribution of heat over, 37
 early ideas concerning, 32
 early speculations, 21
 eclipse of, 39
 equinox, 39
 form and dimensions of, 21
 in aphelion, 37
 in perihelion, 37
 its path round the sun, 37
 orbit, 39
 proper movements of the, 32
 revolution of, 32
 rotation of, 32
 true form, 26, 27
 Globular projection, 30
 Glommen river, 104
 Goa, 240
 Goalpura, 236
 Gobi region, 183, 215
 Godalming, 97
 Godavari river, 230
 Godhavn, 335
 Godthaab, 335
 Gertz, 126
 Gokcha lake, 198
 Gok Su river, 272
 Golconda, 239
 Coast, 227
 Gold Coast, 306
 Golden Horn, 174
 Goletta, 293
 Golfe du Lion, 138
 Gombroon, 266
 Gomera Island, 327
 Gornul Pass, 259
 Gondar, 303
 Gondokoro, 301
 Gonds, 233
 Gorée Islet, 305
 Gorizia, 126
 Göta river, 104
 Göteborg, 107
 Gotha, 118
 Gothland Island, 102
 Gotha, the, 155
 Goulburn, 376
 Government, forms of, 72
 Gozo Island, 102, 159
 Graaf Reinet, 319
 Grachte of Holland, 132
 Gradisca, 126
 Grahamstown, 319
 Grain Coast, 306
 Gramplains, 89
 Granada, 150
 Gran Canaria Island, 327
 Gran Chaco, 368
 Grand Bassam, 306
 Granicus river, 271
 Gran Sasso d'Italia mountain, 153
 Gratz, 124, 126
 Graubünden, 131
 Gravitation, law of, 32
 Great Barrier Reef, 373
 Great Bear Lake, 330, 340
 Great Belt, 108
 Great Fish River, 317, 340
 Great Karoo Plains, 316
 Great St. Bernard Pass, 129
 Great Salt Lake, 330
 Great Slave Lake, 330, 340
 Greater Antilles, 355
 Gredos Sierra de, 145
 Greece, 159
 Greenland, 334
 Danish, 108
 Grenada Island, 356
 Greytown, 354
 Griqualand West, 323
 Griquas, 320, 323
 Grisons, 131
 Groningen, 133, 134
 Ground nut, 310
 Grusians, 193
 Guadalaviar river, 146
 Guadalquivir, river, 81, 146
 Guadalupe, Sierra de, 145
 Guadarrama, Sierra de, 145
 Guadeloupe Island, 356, 357
 Guadiana river, 81, 146
 Guam, 384
 Guanchos, 327
 Guapore river, 366
 Guarani Indians, 363, 366
 Guardafui, Cape, 280, 311
 Guardalajara, 353
 Guarina, 364, 370
 Guatemala, 353, 354
 Guayana or Guiana, 330, 361
 Guayaquil river, 359
 town, 359
 Guebres, the, fire-worshippers, 194, 265
 Guernsey, 89
 Guinea, Gold Coast of, 306
 gold of, 286
 Gulf of, 395
 Guinea, Lower, 309
 Gujrat, 228, 238
 Gulek Boghaz Pass, 269
 Gulf Stream, 56, 58, 103
 Gwalior, 239
 Gymple, 378
 Gypsies, 86, 123, 168, 265, 299
 HAARLEM, 133, 134
 Hadramaut, 276, 278
 Hague, The, 134
 Haidarabad, 238, 239
 Hainaut, 138
 Hai-nan Island, 205, 209
 Hai-phong, 248
 Haji-kak Pass, 258, 261
 Hakha tribe, 207
 Hakodate, 224, 225
 Hala Mountains, 257
 Hala fibre, 292
 Halifax, 339
 Hallein, 126
 Hallstatt, 126
 Hallula, Lake, 292
 Halmahera Island, 256
 Halmund river, 139, 259
 Halys river, 271
 Hamath river, 270
 Hamburg, 81, 116, 118
 Hamda Allahi, 308
 Hamitic family, 287
 Hammamet, gulf of, 293
 Hammel tribes, 299
 Hamrin Hills, 270
 Hamum swamp, 189, 259, 260, 265
 Hangklip Mountains, 321
 Hankow, 186, 209
 Hanoi, 248
 Hanover, 117
 Hanse Towns, 118
 Hapsburg, House of, 121
 Harar, 297, 301
 Harbours, their effect on enterprise, 45
 Hardanger Field Mountains, 80
 Hardt Mountains, 79
 Hardwar, 234
 Hari-rud river, 259, 264
 valley, 260
 "Harmattan" wind, 296
 Hartebeeste Channel, 317
 Hartz Mountains, 78
 Haussa kingdom, 307, 308
 Havana, 356
 Havre, 142
 Hawaiian Islands, 383, 384, 385
 Hawkesbury river, 376
 Hayel, 279
 Hayti Island, 356, 357
 Hazarrah, 260
 Heat, distribution of, 51
 radiation of, 53
 Hebrides, Inner, 89
 Outer, 89
 Heideberg, 120
 (Trans-Vaal), 322

- Heights, measurement of, 46
 Heilbronn, 120
 Hejaz, 267, 268, 272, 275
 Hekla, 80, 112
 Helder, 132, 134
 Hellas, 159
 Hellenes, 159
 Hellespont, 76
 Heligoland, islet of, 102
 Helsingfors, 178
 Hemisphere, 27
 Hennegau, 138
 Herat, 261, 262
 Herculaneum, 153
 Heri river, 259
 Hermannstadt, 128
 Hermon, Mount, 269, 270, 272
 Hermopolis, 162
 Hermus river, 271
 Herrnhut, New, 335
 Herschel Hills, 374
 Herzegovina, 79, 128, 165, 169,
 171, see also Bosnia
 Herzegovinians, 168
 Hesse - Darmstadt, Grand
 Duchy, 118
 Himalaya Mountains, 46, 183,
 184, 227
 Himmelsberg mountain, 109
 Hinka, Lake, 212
 Hindu-kush Mountains, 183,
 258
 Hindu society, castes in, 195
 Hindus, the, 192, 293
 Hio, 224
 Hoang Hai Sea, 205
 Hoang-ho river, 186, 206
 Hobart Town, 380
 Hodeida, 275
 Hokitika, 382
 Hokkaido Island, 222
 Hoklos tribe, 207
 Holland, 77
 or the Netherlands, 132
 foreign possessions of, 134
 Holsteinborg, 335
 Holy Hill, 166
 Hombori Mountains, 304
 Honda, 358
 Honduras, 353, 354
 British, 353, 354
 Hong-Kong Island, 209, 211
 Honolulu, 385
 Hooge Veldt, 321
 Hooker, Mount, 329
 Hor, Mount, 221, 270
 Horeb, Mount, 230
 Horizon, the, 3
 Hormuz, Strait of, 266
 Hottentots, 68, 287, 318
 Houquain, 324
 Howas, 325
 Howe, Cape, 373
 Howrah, 236
 Hudson Bay Company, 340,
 341
 Hudson Bay Territory, 336
 Hudson river, 344
 Hue, 248
 Hugli river, 187, 230
 Huni, 98
 Humaita, 371
 Humber river, 92
 Hungary, 77, 128
 Huns, 123
 Hunter river, 376
 Huron, Lake, 330
 IBERIAN PENINSULA, 144
 Iberians, Old Celtic, 147
 Ibo, 314
 Icaria Island, 268
 Iceland, 108, 111
 Ida, Mount, 80, 175, 268
 Iddah, 307
 Idutywa Reserve, 319
 Igbege, 307
 Igharghar Wady, 295
 Ile de France, 326
 Ili river, 188, 202
 Illnessa mountain, 359
 Illimani mountain, 365
 Illyria, 171
 Illyrian Mountains, 166
 Illyrians, ancient, 168
 Imbros Island, 268
 Imeritans, Caucasus, 199
 Incas, 364, 365
 Independent Turkistan, 362
 India, 192, 195, 227
 Bengal Presidency, 236
 Bombay Presidency, 238
 Central Agency, 239
 Central Provinces of,
 237
 Madras Presidency, 238
 North-west Provinces of,
 236
 French possessions in,
 235
 Independent states of,
 239
 Portuguese possessions
 in, 235
 Tributary native states
 of, 238
 Indians, American, 332
 "Indios bravos," 333
 Indo-European family, 67
 Indrapura mountain, 252
 Indus river, 187, 220, 230
 Inhambane, 315
 Inn river, 127, 129
 Innsbruck, 127
 Interlaken, 130
 Intra, 158
 Ionian Islands, 159, 160
 Sea, 76
 Ipswich (Australia), 378
 Iquique, 365
 Irawadi river, 187, 220, 242
 Irak Ajemi, 267
 Iran, see Persia, 264
 Irbit, 180
 Ireland, see British Isles,
 89
 Iris river, 271
 Iriah Sea, 68
 Irkutak, 201
 "Iron Gates" of the Danube,
 77, 81, 128, 164, 166
 Iroquois, 338
 Ischl, 126
 Isco lake, 153
 Isfahan, 266, 267
 Ishikari river, 225
 Ishim steppe, 182
 Iskanderun, gulf of, 269
 Isker river, 172
 Islay, isle of, 89, 365
 Islimye, 173
 Ismailia, 300
 Isnik lake, 272
 Issus, 269
 Issyk-kul lake, 188, 202
 Istria, 122
 Italy, 152
 Itatiaiosu, 330, 332
 Ivica Island, 145
 Ivory caravans, 310
 Coast, 306
 Izabel, 354
 Itzacihuatl mountain, 352
 JAFFA, 275
 Jaipur, 259
 Jalandabad, 259
 Jamaica Island, 356, 357
 James Town, 327
 Japan, 222
 Japura river, 359, 362
 Jassy, 164
 Jata, 233
 Jauf, Oasis of, 276
 Java Island, 253
 Jaxartes river, 188, 202
 Jebel Abdularis mountain,
 270
 Jebel Aja range, 277
 Jebel Akhdar, 184
 Jebel-al-Tarik, 102
 Jebel Amur mountain, 270
 Jebel Ataka, 280
 Jebel Bisshari mountain, 270
 Jebel-esh-Sheikh mountain,
 269, 270
 Jebel-esh-Sherah mountain,
 270
 Jebel es Soda Mountains, 281,
 294
 Jebel Harun mountain, 270
 Jebel Hassan, 279
 Jebel Judi mountain, 269
 Jebel Kurmul mountain, 270
 Jebel Miltin mountain, 288
 Jebel Mugrah mountain, 270
 Jebel Nusarieh mountain, 270
 Jebel Ruak mountain, 270
 Jebel Selma range, 277
 Jebel Shomer plateau, 270,
 277, 278, 279
 Jebel Sinjar mountain, 270
 Jebel Toweyk mountain, 277
 Jebel Tur mountain, 269
 Jedda, 275
 Jelum river, 187
 Jerez, 149, 150
 Jersey, 89

- Jerusalem, 275
 Jews, 86, 123, 168, 177
 Jhalawan, 258
 Jihun river, 272
 Jinhua, 213
 Jinsen-Ko, 215
 Jodhpur, 239
 John o' Groat's House, 38
 Johore, 250
 Jökulls of Iceland, 112
 Jokuno Island, 226
 Joliba river, 283, 304
 Joloffs, 305
 Jordan river, 272
 valley, 270
 Jorullo mountain, 252
 Jostedal Bræ, 80
 Juan Fernandez, 368
 Juba river, 284
 Jucar river, 146
 Judaea, plateau of, 184
 hill country of, 270
 Julamerik Mountains, 269
 Julfa, 266
 Julianshaab, 335
 Jumna river, 187, 230
 Jungfrau mountain, 129
 Jura Range Mountains, 78, 129
 Jurus river, 362
 Jutland, 108
- KABUL**, 259, 260, 261
 river, 259
 Kabyles, 292
 Kachh, 238
 Kachhi-Gandava, 258
 Kafirs, 260, 318, 319, 323
 Kafir kingdoms, the, 323
 Kafirland, 319
 Kafraria, 319
 British, 319
 Kairwan, 293
 Kaisarieh, 275
 Kakango, 309
 Kakars, 260
 Kalántan, 246, 247
 Kalat, 258
 Kalahara Desert, 324
 Kalamata, 160
 Kalkas, 216
 Kalmucks, 176, 192, 198
 Kamatondo, lake, 283
 Kamput, 249
 Kamtchatka, 200
 Kamtchatdals, 192
 Kanakas, 375
 Kanates, 216
 Kandahar, 261
 Kandy, 241
 Kanem, 308
 Kano, 308
 Kansu, 211
 Kanuri, 308
 Kaolin, Chinese, 208
 Kapuas river, 254
 Kapunda, 379
 Karachi, 238
 Kara Dag, 270
- Karajah Dag, 269
 Kara Kirghiz, 203
 Karakoram mountains, 183, 219
 Kara Kum Desert, 264
 Kara Sea, 185, 201
 Kara Su river, 270
 Karategin, 263
 Karelians, 176
 Karens, 243
 Karikal, 240
 Karkhah river, 244
 Karki, 263
 Karkof, 178
 Karlsbad, 127
 Karlskrona, 107
 Karman, 266, 267
 Kars, 193, 199
 Karshi, 263
 Karuma Falls, 282
 Karun river, 264
 Kasala, 301
 Kasbek, 80
 Kasbek mountain, 197
 Kasbel Dag mountain, 269
 Kashan mountains, 321
 Kashgar, 219
 Kashgar-daria river, 218
 Kashmir, 237
 Kassaba valley, 271
 Kassacks, 176
 Kasvin, 267
 Kathiawar, 238
 Kattegat, 75, 102, 108
 Kaveri river, 281
 Kawele, 314
 Kazan, 178
 Kebrabasa rapids, 284
 Keeper mountain, 91
 Kei river, 316, 319
 Keneh, 300
 Kenia mountains, 281, 312
 Kepler, 32
 Kerry mountains, 91
 Kesanlik river, 166, 173
 Keshin, 326
 Kesho, 248
 Ketchwayo, 323
 Khabur river, 271
 Khaibar Pass, 257, 259, 261
 Khalkis peninsula, 166
 Khandush Dag, 269
 Kharkof, 180
 Kharput, 275
 Khartum, 260
 Khas, 247
 Khatmandu, 240
 Khiva, 182, 190, 262, 263
 Khoja Chai river, 271
 Khoja Sala, 260
 Khojak Pass, 261
 Khorassan, 267
 Khotan, 219
 Khotan-daria river, 218
 Khudavendigiar, 275
 Khuzistan, 267
 Khyber Pass, 257, 259, 261
 Kidderminster, 98
 Kief, 178, 180
 Kiel, 117
- Kila Panja, 262
 Kilauas, 365
 Kilif, 263
 Kilima-njaro mountain, 281, 312
 Killarney, lough, 93
 Kilwa, 313
 Kimberley, 323
 Kingani river, 284
 King George's Sound, 390
 Kinghan mountains, 183, 212
 Kingsmill Islands, 384
 Kingston, 367
 King William's Town, 319
 Kint-Balu mountains, 184, 254
 Kinsale Harbour, 93
 Kiölen heights, 80
 Kiona mountain, 160
 Kipchaks, 203
 Kirghiz, 182, 192, 199, 202
 Kirghiz, Kara, 203
 Kirghiz nomads, 182
 Kirin, 213
 Kishenef, 178, 180
 Kishon, plain of the, 270
 Kisiwani, 313
 Kissovo, 167
 Kita, 305
 Kiushiu Island, 222
 Kivinja, 313
 Kiyef, 178, 180
 Kwanes, 176
 Kizil Irmak river, 269, 271
 Kizil Kum Desert, 182, 302
 Kizil Uzen river, 254
 Klagenfurt, 126
 Klar Elv fall, 104
 Klausenburg, 124
 Klutchev (vol.), 184, 200
 "Kloofs," African, 282, 317, 321
 Knockmealdown mountains, 91
 Koepang, 256
 Koetel river, 254
 Koh-i-Baba mountains, 258, 262
 Kohrud range, 184, 264
 Koja Balkan mountains, 166
 Kokan, khanate of, 203
 Kokcha river, 261
 Koko-nor lake, 189, 220
 Kom, mountain, 166, 170
 Komorn, 128
 Königgratz, 127
 Königsberg, 117
 Kong mountains, 281, 304
 Konkanese, 233
 Kordofan, 297, 300, 309
 Koriaks, 192
 Koron, gulf of, 160
 Korahut Su river, 271
 Kos-gol, 185
 Kossair, 300
 Kotour valley, 269
 Krah, Isthmus of, 243
 Kranovodsk, 303
 Kremlin of Moscow, 178

- Krishna river, 231
Kronstadt, 128, 178, 180
Kroos, 306
Kuban river, 198
Kuch Behar, 236
Kuelan ranges, 183
Kuka, 308
Kulja, 203
Kulugli, 293
Kunduz, 262
Kurdistan, 184, 264, 267, 268
Kurd Kabul Pass, 259
Kurds, 193, 265
Kurian Murian Islands, 278
Kurile Islands, 222, 226
Kur-kara-usu, 217
Kurkleki mountains, 257, 258
Kur river, 198
Kurrun valley, 259, 341
Kustendye, 165
Kutahia, 275
Kutais, 199
Kutchuk Mendere river, 271
Kyhena, 244
Kyrenia, 268
- LAALAND Island, 108
Labrador, 342
Labuan Island, 252, 254
La Calle, 292
Laccadive Islands, 242
Lachlan river, 374, 376
Laconia, gulf of, 160
La Coruña, 150
La Cumbre Pass, 368
Lacus Asphaltites, 192
Ladak, 237
Lado, 301
Ladoga, lake, 82
Ladrome Islands, 384
Læso Island, 108
Lago di Garda, 123
Lago Maggiore, lake, 129
La Guayra, 360
Lagos, 307
Lahor, 237
Leibach, 126
Lama, 195
Lamaism, 177, 195, 220
Lammermoor Hills, 90
Lampong, 252
Landau Fortress, 120
Landeens, 315
Landes, 77, 139
Land's End, 88
Langebergen mountains, 316
Langeland Island, 108
Langres mountains, 79, 138
Laos, 192, 245, 246
Laotian tribes, 246, 247
Laotze, 95
Lanjil, lake, 283
Lanzarote Island, 327
La Paz, 366
La Plata, 369, 371
Lapps, 82, 86, 176
Larissa, 175
Laristan mountains, 264
Larnaca, 268
- La Roca, cape, 75
Las Palmas, 327
L'assa, 220, 221
Latakiah, 275
Latitude, parallels of, 28
Latium, 157
Launceston, 381
Lausanne, 190
Lazistan, Russian, 271
Lebanon mountains, 184, 269, 270
Le Crenzot, 142
Leesambye river, 284
Leeba river, 284
Leeds, 98
Lee river, 93
Leeuwin, cape, 373
Leeward Islands, 357
Lefhorn, 158
Leicester, 98
Leichhardt river, 378
Leipzig, 118
Leith, 99
Leitha river, 121
Lek river, 132
Lemberg, 124, 127
Lemnos Island, 268
Lena river, 182, 185, 186, 200
Leoben, 126
Leon, 148
Leontes river, 270, 272
Lesghians, 193, 198
Lesser Antilles, 355, 356, 357
Letts, Russian, 176
Leuk, 130
Level of the sea, 45
Levuka Island, 284
Lewis, Isle of, 89
Leyden, 133, 134
Leyte Island, 256
Liao-ho river, 213
Liao-ho Valley, 184
Liao-tong, 205, 213
Liberia, 306
trade and products of, 306
Libertad, 354
Libyan Desert, 281, 295, 297
Lichi, 303
Lichtenau, 335
Lichtenfels, 335
Liechtenstein, 127
Liege, 136, 137, 138
Liffey river, 93
Liguria, 156
Ligurians, 155
Lilim Fiord, 108
Lille, 141
Lima, 365
Limasol, 268
Limburg, 135, 138
Limerick, 99
Limoges, 142
Limon, 354
Limpopo river, 284, 316, 321, 322
Lindi, 313
Linga Island, 252
Linz, 126
Lion, Gulf of, 76
Lipari Islands, 153
- Lippe, 118
Lisbon, 81, 151
Rock of, 145
Lithuanians, 114, 176
Li, tribe, 207
Little Belt, 108
Liu-kiu Islands, 222, 226
Liverpool, 81, 98
Livingstone, Dr., 283, 315
mountains, 281
Livingstonia, 315
Livonians or Liva, 136
Lizard, 88
Llama, the, 364
"Llanos," 360
Loa river, 364
Loanda, 310, 311
Loango, 309
Lo Benguela, king, 324
Lob, lake, 189
Lob Nor marsh, 218
Local time, 25
Lochy, Loch, 92
Lofoten Isles, 103, 106
Loire river, 81, 139
Loi tribe, 247, 249
Loja, 359
Lom river, 172
Lomami river, 284
Lombardy, 22, 154, 156
Lomblem Island, 255
Lombok, 255
Lombombo Hills, 315
river, 323
Lomond, Loch, 92
London, 81, 97
Londonderry, 99
Long Island, 348
Longitude, 28
Longobards, 155
Loo-choo Islands, 222, 226
Mountains, 226
Lorraine, 121
Los Roques Island, 356
Loucheux, Indians, 342
Louisville, 350
Lourenzo Marques, 315
Louvain, 136
Low Islands, Polynesia, 385
Lower Cochín China, 242, 248
Lower Guinea, 309
Lowther Hills, 90
Loyalty Islands, 383
Lualaba river, 283, 314
Luapula river, 283
Lubeck, 118
Lucayas, 355
Lucknow, 236
Lufji river, 284, 313
Lugano, 130
Lugnaquilla mountain, 91
Lukoja, 307
Lukuga, 283
Lunar day, 55
Lunenburg Heath, plains, 77
Lupata gorge, 284
Luristan, 267
Luther, Martin, 117
Luura, 265
Luvwa river, 283

- Luxemburg, 185, 138
 Lux, 258
 Luzern, 129, 130, 131
 Luzon Island, 256
 Lydenburg, 322
 Lyons, 141
 Gulf of, 138
 Lys river, 136
 Lyttelton, 382
- MAAS** river, 81, 132, 134, 135, 137
 Maasluys, 134
 Macassar, 255
 Macedonia, 169
 Mackenzie river, 330, 340
 Madagascar, 325
 Madeira Islands, 151, 152, 327
 river, 362, 366
 Madras, 238
 Madrid, 148, 150
 Madura, 238
 Mael Strom, 103
 Magadoxa, see Makdeshu
 Magalies mountains, 821
 Magdala, 304
 Magdalen Islands, 339
 Magdalena river, 358
 Magdeburg, 117
 Magellan Straits, 328
 Magenta, battle of, 156
 Mageröe Island, 103
 Maggiore, lake, 82, 153
 Mags, 243
 Magyar, 85, 123
 Mahanadi river, 230
 Mahe, 240
 Mahebourg, 326
 Mahrattas, 233
 Mährische Höhen, or Moravian Heights, 79
 Maimana, 262
 Maimatchin, 217
 Mainz, 118
 Maitland, 376
 Majorca Island, 145
 Makalla, 278
 Makapans mountains, 321
 Makatee Kafir, 322
 Makdeshu or Magadoxa, 313
 Makololo Kafir, 324
 Makran, 258, 267
 Desert, 258
 Malacca, 242, 249, 250
 Malacca, Strait of, 252
 Malaga, 149, 150
 Malagarazi river, 283
 Malageases, 325
 Malar Lake, 107
 Malatia, 275
 Malay race, 68, 192, 193, 319
 Malayan States, 246
 Maldives Islands, 242
 Malea, Cape, 160
 Malin Head, 89
 Malines or Mechelen, 136, 137
 Malta, 102, 159
 Maltese Islands, 159
 Malvern Hills, 90
- Malwa Plateau, 229
 Mamede, Sierra de, 145
 Mammoth, 182, 200
 Mamoré river, 366
 Man, distribution of, 63
 Isle of, 89
 Mansar, Gulf of, 240
 Managua, 354
 Lake, 354
 Manchester, 98
 Manchuria, 192, 212
 Manchus, 192, 212
 Mandalay, 245
 Mandingoes, 305, 308
 Mangalor, 238
 Manhattan Island, 248
 Manias, lake, 272
 Manica, 815
 Manila, 357
 Manipur, 239
 Manissa, 275
 Manitoba, 336, 341
 Manitah river, 198
 Mannheim, 120
 Mansarawar lakes, 187
 Mans, Le, 142
 Mantua, 158
 Manyuema, 314
 Manzanas, 372
 Moaris, 382
 Maps and mapping, 10, 29
 Maputa river, 316
 Maracaju Heights, 370
 Maracaybo, lake of, 360
 Maranhão, 363
 Marañon river, 364
 Marchfeld, 125
 March river, 122, 127
 Marco Polo, 210
 Marea, 901
 Marec, loch, 92
 Maremma, 84, 153
 Marianne Islands, 384
 Maricao, 322
 Marie-Galante Island, 356
 Mariner's compass, 5
 Maritza river, 167, 173
 valley of, 166
 Marne-Rhine Canal, 139
 Marocco, 268, 290
 Maroni river, 361
 Marowynne river, 361
 Marquesas Islands, 385
 Marrah mountains, 301, 304
 Marselles, 142
 Marshall Islands, 384
 Mars' Hill, 163
 Martaban, 243
 Gulf of, 243
 Martinique Island, 356
 Marv, 259, 264
 Mascarenhas Isles, 326
 Mascat, 279
 Mash-had, 265, 266
 Mashona Range, 324
 Mask, Lough, 93
 Massina, 308
 Massowah, 301, 304
 Matabele Kafir, 324
 Matanzas, 357
- Matapan, Cape, 75, 160
 Matopopo Range, 324
 Matrah, 279
 Matsumaye, 225
 Matterhorn, mountain, 129
 Maule river, 367
 Maulmain, 243
 Mauna Loa (vol.), 385
 Mauritius Island, 326
 Mavro Nero Torrent, 160
 Mavro Potamo river, 160
 Mayence, 118
 Mayotta Island, 326
 Maypu river, 367
 Mazagan, 291
 Mazandaran, 267
 Mazatlan, 353
 Mecca, 270, 275
 Mecklenburg Grand Duchy, 118
 Mecklenburg-Schwerin, 118
 Medina, 270, 275
 Mediterranean Sea, 76
 Megalo Kastron, 175
 Mehdia, 293
 Mehemet Ali, 299
 Meissen, 118
 Me-Khong river, 186, 220, 242, 245, 248, 249
 Melacoree river, 305
 Melanesia, 383
 Melbourne, 377
 Meleguetta pepper, 306
 Melilla, 150
 Melinde, 313
 Melville Island, 373
 Memel, 117
 Memphis, ruins of, 300
 Menado, 255
 Menai Strait, 89
 Menam, 242
 river, 186, 245
 Menderes Su river, 271
 Mendif, Mount, 281, 304
 Mendoza, 369
 Menza, 301
 Mequinez, 291
 Merash, 275
 Mercator's projection, 31
 Mergul, 243
 Meridian, 4
 of longitude, 28
 prime, 29
 Merj-ibn-Amir plain, 270
 Merka, 313
 Merom, lake, 272
 Merrick mountain, 90
 Mersey river, 81, 92
 Mersina, 275
 Merv, see Marv, 264
 Meshed Ali city, 273
 Mesopotamia, 182, 267, 268
 (S. America), 370
 Messina, 158
 Strait of, 154
 Mestizos, 354, 359
 Mesurado, Cape, 306
 Meta river, 366
 Metemmeh, 304
 Metz, 121

- Meuse river, 81, 182, 185, 187, 189
Mexico, 329, 351
 (city), 353
Miako or Kioto, 224
Miantze tribe, 207
Mia Wady, 295
Michigan, lake, 330
Micronesia, 384
Middleburg, 322
Mikado of Japan, the, 195
Mikindani Bays, 313
Milan, 158
Millet or Durra, 298
Miltain mountain, 281
Milwaukie, 350
Min river, 206
Minchinmadvia (vol.), 372
Mincio river, 153
Mindanao Island, 256
Mindoro Island, 256
Ming dynasty, 212
Mingrelians, 193, 198
Minho river, 146
Minorca Island, 145
Minou Islets, 326
Miquelon - Langlade Island, 343
Mira river, 359
Misol Island, 256
Mississippi river, 330, 345
Missouri river, 345
Mistral wind, 139
Mitchell river, 378
Mitylene Island, 268
Mizen Head, 89
Moab plateau, 184
 mountains, 270
Moans, 244
Mobile river, 345
Modder river, 321
Mölar lake, 82, 104
Möen Island, 108
Moeris, lake, 298
Moero, lake, 283
Moesia, ancient, 172
Mogador, 291
Mogdesho, see Makdeshu
Mohammed, 194
Mohammedan Asia, 257
Mohammedanism, 193
Mohawks, 338
Moi tribe, 247, 249
Moisture, distribution of, 59
Mokta-el-Hadid mines, 292
Moldavia, 163
Mollise, 157
Moluccas, 256
Mombasa, 313
Mona Isle, 89
Monastir, 293
Monchique, Sierra de, 145
Mongolia, 215, 217
Mongolians, 67, 85, 102, 207
Monothelism, 70
Montpellier, 141
Monrovia, 306
Mons, 137
"Monsoon" wind, 53, 230, 281
Mont Blanc, 78, 188
Mont Cenis, 158
Mont Dore, 188
Montenegrins, 168
Montenegro, 79, 165, 170
Monte Rosa, 127, 129
Monte Rotondo, 80
Monte Video, 371
Monto Corvo, 153
Montserrat Island, 356
Moorfoot Hills, 90
Moormen, 241
Moors, 290, 292, 293, 296
Moplays, 242
Morava river, 169, 170
Moravia, 127
Moravian Heights, 122
Mordvins, 176
Morea, 159, 160
Morena, Sierra de, 145
Morlachs, 171
Morrison mountain, 184, 205
Moscow, 178
Moscow, 178
Mossamedes, 310, 311
Mossuril, 314
Mostaganum, 292
Mostar, 172
Mosul, 275
Motagua river, 353
Mourne mountains, 91
Moxos, Indians, 366
Mozambique, 314
Mukden, 313
Mulahacem mountain, 145
Mulattoes, 355, 366
Mülhausen, 121
Mull, Isle of, 89
Multan, 237
Mulya river, 290
Munich, 119
Munio mountains, 374
Murad-chai river, 269, 270
Murchison Falls, 282, 284
Murcia, 149, 150
Murgh-ab river, 259, 262
Murong river, 254
Murray river, 374, 376
Murrumbidgee river, 374, 376
Murshedabad, 236
Murzuk, 294
Musart Pass, 219
Mush, 275
Mushinga mountains, 281
Musk, 221
Mutshobo, 245
Mweelrea mountains, 91
Myrrh, 278, 311
Mysor, 236, 237
NACHTIGAL, Dr., 309
Nagasaki, 224
Nagpur, 236, 237
Nagunie river, 283
Nahr-el-Ahsey mountain, 269
 river, 272
 Valley, 270
Nahr-el-Kasimiyeh river, 270
Nahr-el-Litany, river, 272
Namaqua Hottentots, 324
Namaqualand, 324
Namcho Lake, 230
Nampur, 136, 137
Nancy, 148
Nan-hei Sea, 205
Nanking, 211
Nan-ling mountains, 183, 205
Nan-shan river, 226
Napier, 382
Naples, 157, 158, 159
Napo river, 259
Narbada river, 230
Nari, Province of, 221
 river, 259
Narin river, 202
Nasik, 238
Nassan, 357
Nasser, 300
Natal, 320
Natuna Islands, 252
Nauplia, Gulf of, 160
Navarre, 149
Navigator's Islands, 385
Nawa, 226
Neagh, Lough, 93
Necker river, 120
Neembucuu Marsh, 370
Nefud Desert, 276
Negoi mountain, 122
Negritos, 69, 193, 256
Negro family, 68, 265, 278, 287, 294, 299, 375
Negroponte Island, 160
Negros Island, 256
Niemen, 82
Nejd, The, 270, 276, 277, 278, 279
Nelson, 382
 river, 330, 340
Nepal, 239
Nephin mountains, 91
Ness, Loch, 92
Ness river, 92
Nestorian Christians, 265
Netherlands, The, 132
 Trading Company, 253
Neuchatel, 82, 129, 130
Neusiedl Lake, 112
Neva river, 82
Nevada, Sierra, 145
Nevis, Island, 356
New Amsterdam, 361
Newark, 349
New Britain Islands, 384
New Brunswick, 336, 338
New Caledonia, 383, 384
Newcastle, 98
 (Australia), 376
New England Range (Australia), 376
Newfoundland, 336, 342
New Granada, 357
New Guinea, 383
New Hebrides Islands, 384
New Munster, 431
New Orleans, 350
New Plymouth, 382
New South Wales, 373
Newton, Sir Isaac, 32, 33

- New Ulster, 381
 New York, 348
 New Zealand, 381
 Nezwar, 279
 Ngami, Lake, 285
 Niagara Falls, 337
 Nicaragua, 253, 254
 Lake, 330, 354
 Nice, 142
 Nicopolis, 172
 Nicosia, 268
 Nieuweveld mountains, 317
 Niger river, 281, 283, 304, 307
 Nijni-Novgorod, 180
 Nikolayef, 178, 180
 Nikschich, 171
 Delta, 282, 298
 inundations of, 298
 river, 281, 282, 298, 302
 Nilgiri Hills, 229
 Nimes, 141
 Ning-po, 209
 Nipon Bassi Bridge, 223
 Nipon Island, 222
 Niris, lake, 265
 Niu-chwang, 209, 213
 No, lake, 282
 Nogais, 176, 198, 263
 No-man's-land, 320
 Nordenakiöld, naturalist, 201
 Nord Kyn, 103
 Nore river, 93
 Norfolk Island, 376
 Normberga, 119
 North Brabant, 135
 North Cape, 75, 103
 North Channel, 88
 North-East Passage, 185
 "Northern Lights," 82
 North Island (New Zealand), 381
 Northmen, the, 105
 North Sea, 75, 87
 North Star, 9
 North-West Passage, 343
 North-West Territory, 336, 340
 Norway, 102
 Norwich, 98
 Nossi Bé Island, 326
 Nossi Burra, 326
 Nottingham, 98
 Nourse river, 284
 Nova Scotia, 336, 339
 Nubia, 297, 298, 300
 Nubian deserts, 299
 Nucha, 199
 Nuehrs, 299, 300
 Nueva Guatemala, 354
 Nueva Salvador, 354
 Nu Gariep river, 284, 317, 321, 322
 Numidians, 287
 Nürnberg, 119
 Nutmeg tree, 256
 Nyam-Nyams, 299
 Nyangwe, 314
 Nyassa, lake, 284
 Nyl Strom river, 322
 Nymegen, 134
 Oases of the Sahara, 295
 Oberland, 129
 Obi river, 185, 200
 "Occidental Land," 181
 Ocean currents, 56
 Oceanic negroes, 375
 Ochil Hills, 90
 Oder river, 82, 114, 122
 Odessa, 178, 180
 Ogaden, 311
 Oglio river, 153
 Ogowé river, 281, 283, 309
 Ohio river, 345
 Oich, loch, 92
 Okanda river, 183
 Okhrida, lake, 167
 Oland, 102
 Old Calabar river, 307
 Oldenburg Fens, plains, 77
 Grand Duchy, 118
 Oldenwald mountains, 78
 Olifants river, 317, 322
 Olmütz, 127
 Olutha, 216
 Olympus, mount, 166, 167, 168
 Oman, 275, 277, 278, 279
 Ombai Island, 255
 Omcoa, 354
 Onega, lake, 92
 Oneyzah, 279
 Onitaba, 307
 Ontario, lake, 330, 336, 338
 Oorklep mines, 318
 Ophir, mount, 250
 mount (Sumatra), 252
 Optium, Chinese, 207
 Oporto, 81, 152
 Oran, 292
 Orange River, 284, 316, 317, 321, 323
 Orange Free State, 316, 320
 Ordos, 216
 Oregon river, 345
 Orembavola river, 283
 Orembawango river, 283
 Orenburg, 180
 Organ mountains, 362
 "Oriental land," 181
 Orinoco river, 330, 360
 Orissa coast, 227
 Mehals, 236
 Oristano bay, 154
 Orizaba mountain, 351
 Orkney Isles, 89
 Orleans, 140, 141
 Orcafa, 80
 Orontes, mountain, 269
 river, 272
 Orotava, 327
 Orsova, 128
 Ortler Spitze mountain, 122
 Oruba Island, 356
 Orura, 366
 Osaka, 224, 225
 Osmanli Turks, 85, 167
 Osmer river, 172
 Ossa mountain, 166, 167
 Ossetes, 193, 198
 Ostend, 187
 Ostiaks, 192
 Ostrich, 286
 farming, 318
 Otago, 382
 Othrys mountains, 168
 Ottowa river, 337
 Oudh, 236
 Ouro Preto, 363
 Ourthe river, 136
 Ouse, Yorkshire river, 92
 Outeniqua mountains, 316
 Ova Herero, 324
 Ovampos, 325
 Overysel, 135
 Ovis Ammon, 219
 Owen Stanley mountains, 383
 Oxus river, 188, 202, 259, 260
 Oypak, river, 361
 PADANG, 252
 Padua, 155
 Pagan, 245
 Pahang, 250
 Palar river, 231
 Palawan Island, 254, 256
 Palembang, 252
 Palencia, 158
 Palestine, 267, 268
 Palk Strait, 240
 Palma, 150
 island, 327
 Palmerston, 379
 Palm oil, 306, 307
 Paldi lake, 220
 Palus Tritonis, 289
 Pamir steppe, 183, 259, 260
 Pampa Auilagas lake, 366
 "Pampas," 331, 368, 369
 Pamplona Pass, 148
 Panama, isthmus of, 328, 329, 353, 358
 Panar river, 231
 Panay Island, 256
 Pancore Islands, 250
 Pangani, 313
 Panjab, 187, 237
 doabs, 228
 Panjim, Malay, 249
 Panjad river, 187
 Panom-peng, 249
 Pantar Island, 255
 Papal States, 156
 Papeete, 385
 Papho, 268
 Papua, 383
 Papuas, 69, 193
 Pará, 363
 Paraguay, 362, 370
 Paramaribo, 361
 Paramatta, 376
 Paraná river, 330, 362, 368, 370
 Paranahyba river, 362
 Paris, 141, 142
 treaty of, 163, 164
 Parker, Fort, 378
 Parma, 155
 Parnassus mountain, 160

- Parnon mountains, 160
 Pato Island, 162
 Paurases, 194, 265
 Pasco, 365
 Patagonia and Tierra del
 Fuego, 371
 Patagonian Indians, 372
 Patani, 246, 247
 Pathana, 260
 Patmos Island, 268
 Patras, 159, 162
 Paumotu, 385
 Paysandu, 371
 Peace river, 340
 Pechora river, 82
 Pe-chi-li Gulf, 205
 Pedrotallagalla mountain, 241
 Peel Island, 227
 Pegu, 243
 Pei-ho forts, 209
 river, 206
 Peipus lake, 92
 Peking, 206, 210
 Pelew Islands, 384
 Pe-ling mountains, 183, 205
 Pelion mountain, 166
 Peloponessus, 159
 Penang, 250
 Pendulum experiments, 33
 Peninsulas, 45
 Pennine Chain, 90
 Pentapolis, 94
 Pentland Firth, 88
 Hills, 90
 Peoples of the World, 66
 Pera, 174
 Perak, 250
 Perihelion, position of, 37
 Perim Island, 278
 Perm, ironworks of, 179
 Permyaks, 176
 Pernambuco, 363
 Persepolis, 267
 Persia, 184, 192, 264
 Persians, 278
 Perth (Australia), 380
 Peru, 328, 364
 Pergia, 155
 Peshawar, 234, 237, 260
 Pest, 124
 Peterwardein, 128
 Petrozavodok, 179
 Pfäfers, 190
 Pharpur river, 272
 Philadelphia, 348
 Philipppeville, 292
 Philippine Islands, 250, 256
 Philippopolis, province of,
 173
 town, 173
 Phoenicians, 147, 155
 Phoenix Islands, 383
 Physical Geography, 21
 Pic de Nethou, 79, 138
 Pichincha mountain, 359
 Piedmont, 156
 Pietermaritzburg, 820
 Pilcomayo river, 366, 368
 Pindus Mountains, 79, 160,
 166
 Piræus, 162
 Pitsa, 155
 Pishin Valley, 261
 Pitcairn Island (Polynesia),
 377, 383, 385
 Planets, movements of, 32,
 34, 35
 Platten See, lake, 122
 Plevna, 172
 "Plough," 7
 Plymouth, 98
 Plynlimmon, Mount, 90
 Po, river, 81, 153
 Podgoritz, 171
 Point de Galle, 242
 Pola, 126
 Poland, 178
 Polders of Holland, 132
 Pole-star, 9, 24
 Poles, 114, 123, 176
 Political systems of the
 world, 66
 Polynesia, 384
 Polynesian, 68, 383
 Polytheism, 70
 Ponape, 384
 Pondichery, 240
 Pandomise Kafra, 319
 Pongo river, 305
 Pompeii, 153
 Pontevedra Bay, 145
 Pontianak, 254
 Pontine Marshes, 84, 153
 Popocatepetl Mount, 329,
 352, 353
 Population of the world, 66
 Porcelain, Chinese, 208
 Port au Prince, 357
 Port Darwin, 379
 Port Denison (Queensland),
 378
 Port Elizabeth, 319
 Port Jackson, 376
 Port Louis, 326
 Port Philip, 377
 Port Royal, 357
 Port Said, 299
 Porto Santo Islet, 327
 Portsmouth, 99
 Portugal, 144, 151
 foreign possessions of,
 African, 310, 311, 314
 Indian, 240, 256
 Posen, 117
 Potchefstroom, 322
 Poti, 199
 Potomac river, 344
 Potosi, 366
 mountain, 366
 Poultry, Asiatic, 191
 Povindah, 360
 Poyang-hu, lake, 206
 Prague, 127
 "Prairies," 381, 345
 Pretoria, 322
 Pressburg, 128
 Primeira chain, 314
 Prime Meridian, 29
 Prince Edward Island, 386,
 389
 Prince of Wales Island, 250
 Prince of Wales Peninsula, 329
 Prince's Island, 281, 309
 Prinsen or Prinsendi, 175
 Prishtina, 175
 Proboling, 253
 Projections, various, 30
 Prome, 243
 Provençal, 140
 Providence, 348
 Province Wellesley, 250
 Prussia, 116
 Pruth river, 164
 Ptolemy, 22
 Puebla, 353
 Puerto Cabello, 360
 Principe, 357
 Rico, 356
 Pulo-Condor Islands, 249
 Puna, 238
 "Punas" region of Peru, 364
 Bolivia, 365
 Punta Arenas, 354, 372
 Punta da Lenha, 310
 Puntl tribe, 207
 Purus river, 362
 "Put," 183
 Putumayo river, 359
 Pyramus river, 272
 Pyrenean peninsula, 144
 Pyrenees mountains, 79, 145
 Pyrenees, 330, 362
 Pygmies, land of the, 22
 "QUADRILATERAL, The," 158
 Quarken Islands, 102
 Quarnero, 126
 Quebec, 336, 338
 Quedah, 346, 347
 Queen Charlotte Islands, 342
 Queensland, 373
 Querimba Islands, 314
 Quetta, 258, 261
 Quichua, 364, 366
 Quillman, 314
 Quinhon, 248
 Quito, 359
 Quorra river, 283
 RABAT-SELAH, 291
 Radiation of heat, 53
 Ragusa, 128
 Rain, distribution of, 59
 effect of mountain ranges
 on the, 62
 Rajput tribes, 283
 Rajputana, 283
 Rangoon, 243
 Rannoch, Loch, 92
 Rann of Kachh, 228
 Rannun, 104
 Ras Dashan peak, 302
 Ras el Kerun, cape, 280
 Rasht, 266
 Ravi river, 187
 Red river, 341, 345
 Settlement, 341

- Ree, Lough, 93
 Reichenberg, 127
 Reims, 142
 Reindeer, 82, 179, 191
 Religions of the World, 66, 70, 193
 Religious belief, effects of, 69
 Rennes, 142
 Reshades, 296
 Réunion Island, 326
 Reus, Principality, 118
 Revel, 178, 180
 Rheto Romanic branch, 130
 Rhenish palatinate, 120
 Rhine river, 77, 81, 114, 120, 129, 132
 Rhodes Island, 268, 275
 Rhodope mountains, 79, 166, 174
 Rhön mountains, 78
 Rhone river, 81, 129, 139
 Rhuarb, Chinese, 211
 "Riachos," 368
 Riadh, 279
 Ribe, 313
 Richellieu river, 337
 Richmond (U.S.), 349
 Riesen mountains, 79, 122
 "Riff," The, 289
 Riga, 178, 180
 gulf, 76
 Rigaf, 201
 Rigi, 130
 Rilo Dag, 166
 Rio de Janeiro, 363
 de la Plata, 369
 Grande river, 352, 363
 Grande del Norte, 345
 Negro river, 362, 371, 372
 Pongo, 305
 San Pedro, 305
 Vermejo, 369
 Rion river, 198
 Riou archipelago, 252
 Ripon falls, 282
 Ristigouche river, 339
 Riviera, 115
 "Riverina" (Australia), 376
 Rjukand Fos falls, 103
 Roanoke river, 344
 Rochester (U.S.), 349
 Rockhampton, 378
 Rock of Gibraltar, 145
 Rock of Lisbon, 75, 145
 Rocky Mountains, 329, 345, 351
 Rodriguez Island, 326
 Roggeveld mountains, 317
 Rohifs, the traveller, 308
 Romania, 78, 138, 163, 169
 cape, 181
 Romanic group, 85, 123, 130, 164
 Romans, 155
 Rome, 155, 157
 Romeni, 164
 Rosario, 369
 Roses, attar of, 173
 Rosetta, 299
 Rostock, 117
 Rostof, 180
 Rotation of the earth, 32
 Rotterdam, 81, 134
 Rouen, 141
 Roumella, Eastern, 165, 169, 172
 Rousselasre, 137
 Roveredo, 127
 Rovuma river, 284
 Rowandiz peak, 269
 Ruahine range, 381
 Ruapehu mountain (vol.), 381
 Ruia river, 180
 Rufu river, 284
 Rumella, 169
 Rumili, 169
 Rupel river, 136
 Rupert's Land, 336, 340
 Russia—General, 77, 176, 178
 Russian Armenia, 271
 Russian Asia—
 Central Asia, 197, 202
 Lazistan, 271
 Siberia, 199
 the Caucasus, 197
 Russniaks, 123, 176
 Rustchuk, 172
 Rustenburg, 322
 Ruthens, 123, 176
 Ruthenians, 123

 SAADANI, 313
 Sean, 324
 Saba Island, 356
 Saint, dukedom of, 171
 Sabah, 254, 255
 Sable Island, 339
 Sabzawar, 266
 Sadowa, village, 127
 Safid Koh mountains, 259, 260
 Saghalien Island, 201
 Saguenay river, 337
 Sahama (vol.), 365
 Sahara, the—
 region, 61, 282, 289, 292, 294
 Sahmelads, 176
 Saigon, 248
 St. Bartholemew Island, 356
 St. Bernard, 129
 St. Christobal, 327
 St. Christopher Island, 356
 St. Denis, 326
 St. Elias, Mount, 160, 329
 St. Etienne, 141, 142
 St. Eustatius Island, 356
 St. Gall, 130, 131
 St. George's Channel, 88
 St. Gothard Pass, 78, 131, 158
 St. Helena Island, 327
 St. John, island of, 340
 (New Brunswick), 339
 St. John's (Newfoundland), 342
 river, 319, 339
 St. Juan del Norte, 354
 St. Lawrence, Gulf of, 342
 St. Lawrence river, 330, 337
 St. Louis, 305
 St. Louis, 326
 (U.S.), 349
 St. Lucia Island, 356
 Sta. Marie Island, 356
 St. Martin Island, 356
 St. Maurice, 130
 river, 337
 St. Michael, 152
 St. Nazaire, 142
 St. Petersburg, 178, 180
 St. Paul de Loanda, 311
 St. Pierre Island, 343
 St. Quentin, 141
 St. Thomas Island, 281, 309, 357
 St. Vincent Cape, 145
 St. Vincent Island, 327, 356
 Sakalavas, 325
 Sakaria river, 271
 Sakhalin Island, 201
 Salado, river, 368
 Salambria river, 167
 Salangore, 250
 "Salinas," 368
 Salisbury Plain, 90
 Salonica, 75
 Gulf of, 167
 Salta, 369
 Saltholm Island, 108
 Salto Grande, 371
 Salt Range, 228
 Salwatty Island, 256
 Salwen, 242
 River, 187, 220
 Salzburg, 122, 124, 126
 Samar Island, 256
 Samara, 180
 Samarang, 253
 Samarinda, 254
 Samarkand, 182, 203, 262
 Sambre river, 135, 137
 "Samiel" wind, 273
 Samoa Islands, 385
 Samos Island, 268
 Samothrace Island, 268
 Samothraki, island of, 166
 Samoyeds, 82, 85, 177, 192
 Samsó Island, 108
 Samsun, 275
 Sanbok Islands, 226
 Sandalwood Island, 255
 Sandhurst, 377
 San Domingo Island, 356, 357
 river, 305
 San Dunes, 109
 Sandwich Islands, 383, 385
 San Francisco, 346
 Sang, province of, 221
 Sangalak river, 259
 Sangar Islands, 255
 Sangarius river, 271
 Sanitaria, 191
 San José (Guatemala), 354
 (Costa Rica), 354
 San Juan, 309
 river, 353
 San Luis mountains, 368
 San Marino, 159

- San Pedro river, 305
 San-po river, 187
 San Salvador, 310, 353, 354
 Sansandig, 308
 San-san Islands, 226
 San Sebastian, 150
 Santa Cruz Islands, 383
 river, 372
 Santander, 150
 Santee river, 344
 Santiago Island, 327, 352, 368
 Santiago di Cuba, 356
 Santos, 363
 São Francisco river, 362
 Saone river, 139
 São Paulo, 263
 Sarabat Chai river, 271
 Sarakarta, 253
 Saratof, 180
 Sarawak, 252, 254
 Sarawan, 258
 Sardinia, 152, 154, 157
 Saros, Gulf of, 166
 Sarpenvos fall, 104
 Saskatchewan rivers, 340
 Satlej river, 187
 Satpura Hills, 229
 Satsuporo, 225
 Savanilla, 358
 Savannah river, 344
 Save river, 122, 165
 Savoyards, 155
 Saxe-Coburg Gotha, 118
 Saxe-Weimar, Grand Duchy
 of, 118
 Saxony, 117
 Sayan mountains, 183, 200
 Scamander river, 271
 Scandinavia, 102
 and Denmark, 76, 77, 102
 Scania, plain of, 102
 Scawfell hill, 90
 Schaffhausen, 130, 131
 Scheldt river, 132, 136
 Scheveningen, 134
 Schiedam, 134
 Schleswig, 108
 Schneckkoppe mountain, 122
 Schouwen, 132
 Schwartzburg Principality,
 118
 Schwarzwald mountains, 78
 Schwyz, 131
 Scotland, see British Isles,
 89
 Seutari, Lake, 167
 Sea and land, distribution of,
 42
 bed of the, 47
 level of the, 45
 of Azof, 76
 temperature of, 52
 slugs, 225
 Seals, 82
 "Sebkhas" or Marshes, 289
 Sebu river, 290
 Sedan, 142
 Sego, 308
 Segura river, 146
 Sehend Koh mountain, 265
 Seine river, 81, 139
 Seistan, province, 260, 261,
 267
 Lake, 189
 swamp, 259
 Selenga river, 185
 Seleucia, 272
 Selish Indians, 342
 Semipalatinsk, 202
 Semitic family, 67, 86, 167,
 192, 193, 387
 Semlin, 128
 Semyen mountain, 302
 Sena, 314
 Senaar, 300
 Senegal river, 283, 304, 305,
 306
 Senegambia, 305
 "Septem Triones," 7
 Serai-Bosnia, 172
 Seraing, 137
 Serayevo, 172
 Seringapatam, 237
 Serra do Mar, 362
 Sert, river, 271
 Servia, 79, 165, 169, 170, 175
 Servians, 123, 168
 Setubal Bay, 145
 Sevastopol, 180
 Severn river, 92
 Vale of, 91
 Seville, 145, 150
 Sévres, 142
 Seychelle Isles, 326
 Seyul, 214
 Sfax, 293
 Shamanism, 177, 196
 Shambli, 301
 Shamer, 277
 Shamo Desert, 215
 Shan Alin, 184
 Mountains, 212
 Shanghai, 209
 Shannon river, 93
 Shans, 244, 245
 Shan-ta-bun, 246
 Shari river, 285, 304
 Sharja, 279
 Shat el Arab, 188, 271
 Shawl, 258
 Shea butter, 307
 Shellah mountain, 289
 Sheliff river, 291
 Shemakha, 199
 Sherboro Island, 305
 Shere Ali, 261
 Sherian Dagb, 269
 Shetland Isles, 89
 Shiahs, 265
 Shields, 98
 Shikoku Islands, 222
 Shilka river, 186
 Shiluk Negroes, 290, 300
 Shimonoseki, 225
 Shingeti salt-mines, 296
 Shing-king, 213
 Shin, Loch, 92
 Shipka Pass, 166
 Shiraz, 265, 266, 267
 Shire river, 284, 315
 Shituri, 226
 Shoa, 303
 Shoalhaven river, 276
 Sho-oon of Japan, the, 224
 Shott Kebir sands, 289
 Shott Melghir, 289
 "Shume" wind, 296
 Shumla, 172
 Shutargardan Pass, 259, 261
 Siak, 252
 Siam, 186, 245
 Siamese, 192, 246
 Siberia, 182, 190, 192, 196, 199
 Siberiaks, 200
 Siberian mammoth, 182
 Sicily, 152, 157
 Sidereal day, 35
 Sidlaw Hills, 90
 Siebenbürgen, 122
 Siena, 155
 "Sierra" region of Peru, 264
 Sierra Estrella, 79
 Sierra Guadarrama moun-
 tains, 79
 Sierra Leone, 305
 Sierra Morena, 79
 Sierra Nevada, 79, 329, 345,
 351, 360
 Sihun Chai river, 272
 Sikhota Alin, 184
 Sikhs, 233
 Si-kiang river, 206
 Sikkim, 236
 Silesia, 125, 127
 "Simoom" wind, 276
 Simpon Pass, 131
 Simpson river, 341
 Sinai Peninsula, 297
 Singapore Island, 250
 Singhalese, 241
 Sinope, 275
 Sinto temples, 195
 Sintuism, 195
 Siriāns, 176
 Siri-kul Lake, 260
 "Sirocco" wind, 84, 296
 Siatova, 172
 Sitka, 343
 Siul, 226
 Siu-san Island, 226
 Siut, 300
 Siyas, 275
 Siwah, Oasis of, 297
 Skader Lake, 167
 Skager Rack, 75, 102, 103
 Skāne, plain of, 102
 Skhar Dagb or Scardus, 166,
 175
 Skipetars, 168
 Skye, Isle of, 89
 Slavonia, 128, 165
 Slavonians, 85, 128, 165, 167,
 168, 175, 193
 Slavs, 85, 123
 Slieve Bloom mountains, 91
 Sligo Bay, 93
 Slivno, 173
 Slovaks, 123
 Slovenes, 123
 Smyrna, 275

- Sneeuwbergen mountains, 317
 Snowdon mount, 90
 Snow-line, 83
 Sobat river, 282
 Society Islands, 285
 Socotra, 326
 Sofoia, 286, 315
 Sofoa, 172
 Soghanly Su river, 271
 Sohar, 279
 Sokota, 304
 Sokoto, 303
 Solano wind, 84, 147
 Solar day, 35
 Solent, 89
 Solferino, battle of, 156
 Solomon Islands, 384
 Solothurn, 131
 Solstice, 39
 Solway Firth, 92
 Somali Country, 301, 311
 Somali and Gallas, 311
 Somalis, 278
 Somerset, 378
 Song-ka river, 186, 247
 Sorata mountain, 365
 Soudan, see Sudan
 Soumali, see Somali
 Sound, the, 102, 108
 Soundings, ocean, 47
 South Africa, 316
 South America, 357
 Southampton, 98
 South Australia, 293
 Southern Alps (New Zealand), 381
 South Downs, 90
 South Foreland, 88
 South Island (New Zealand), 381
 South Sea of China, 205
 South-Western Archipelago, 356
 Spa, 187
 Spain, 144
 foreign possessions of, 150, 309
 Spalato, 128
 Spanish Town, 357
 Spencer Gulf, 373
 Sperrin mountains, 91
 Spey river, 92
 Speyer, 120
 Spice Islands, 256
 Spielberg, 127
 Spire, 120
 Spitz, 169
 Splügen Pass, 129
 Spree river, 117
 Stafford, 98
 Staffordshire Potteries, 98
 Stanley Harbour, 392
 Mr., 283
 Stanovoi mountains, 183, 200
 Stars, movements of the, 34
 Staten Island, 948
 Stavropol, 193, 199
 Stevns Klint, 109
 Steppes, 77, 176
 Stereographic projection, 30
 Stettin, 117
 Stewart Island, 381, 382
 Steyr, 126
 Stikine river, 341
 Stilfser Joch, 78
 Stor-Elv river, 104
 Straits Settlements British, 242, 250
 Stralsund, 117
 Strasburg, 121
 Strathmore, 90, 91
 Strelitz, 118
 Stromboli mountain, 153
 Stroud, 98
 Stuttgart, 120
 Styria, 124, 126
 Styx, the, 161
 Suakin, 300, 301
 Sual, 257
 Sucre, 366
 Suda, Bay of, 175
 Sudan, 295, 297, 298, 304, 308
 Sudetic Mountains, 122
 Suedia, 272
 Suez, 299
 Canal, 181, 299
 Suilvein, 89
 Suir river, 93
 Sukhum, 199
 Sukurlu, river, 271
 Sulaiman range, 184, 228, 269
 Sulu Islands, 250
 Sumatra, 252
 Sumba Island, 255
 Sumbawa Island, 255
 Sun, magnitude of the, 36
 distance of earth from the, 35
 rising and setting, 34
 the source of heat, 37
 Sunda Islands, 250
 Lesser, 255
 Sundarbans, 183, 187, 223
 Sunderland, 98
 Sungari river, 186, 212
 Suniteh, 216
 Superior, Lake, 330
 Sur, 272
 Surabaya, 253
 Surat, 238
 Surinam river, 361
 Sus, 291
 Susa, 293
 Susquehanna river, 344
 Suwo Nada Channel, 222
 Swabia, 120
 Swahili, 312, 325
 Swan river, 380
 Swansea, 98
 Swatow, 209
 Sweden, 102
 Switzerland, 128
 Sydney, 376
 Sylhet, 236
 Syr Daria river, 188, 202
 Syra, 162
 Syria, 267, 268, 275
 Syrians, 274
 Szegedin, 128
 Szeklers, 123
 TAASINGE Island, 108
 Table Mountain, 317
 Tabora, 314
 Taborian, 254
 Tabriz, 266, 267
 Tafilet, oasis of, 291
 Tagalas, 256
 Taganrog, 180
 Tagus river, 81, 146
 Tahiti Island, 385
 Tai-hu lake, 206
 Tai-wau Island, 205
 Tajiks, 193
 Taka, 301
 Takazze river, 282, 302
 Takla Makan Desert, 185
 Takue, 301
 Talcahuano, 368
 Talé-Sap Lake, 249
 Tamar river, 380
 Tamarieh Mountains, 270
 Tamatave, 326
 Tamboro (vol.), 255
 Tambukis, 319
 Tamerlane, 203
 Tamilians, 233
 Tamils, 241
 Tanega Island, 226
 Tanganyika, Lake, 283, 314
 Tangier, 291
 Tangutans, 220
 Tanjor, 238
 Tanta, 299
 Taodeni salt mines, 296
 Taouim, 195
 Tapajos river, 362
 Tapti river, 230
 Taranjis, 203
 Tarbagatal, 217
 Ranges, 183
 Tarim river, 183, 189, 218
 Tarragona, 150
 Tarso, Mount, 296
 Tashkend, 203
 Tasman glacier, 381
 Tasmania, 380
 Tasmanian Islands, 373
 Tartaric race, 167, 176, 192, 273
 mountains, 184
 Tatra mountain, 122
 Tajiks, 260, 262, 265
 Taurus mountains, 78
 Taupo lake, 381
 Taurus ranges, 184, 269
 Tavoy, 243
 Taygetos mountains, 160
 Tay Loch, 92
 river, 92
 Tcheremisses, 179
 Tea, Chinese, 206
 Tebus negroes, 294
 Tees river, 92
 Tehamah, the, 272, 273
 Tehran, 266, 267
 Tehuantepec Isthmus, 329
 Tehuelches, 372
 Tekke, the, 264
 Telangs, 244
 Telescope, invention of, 25

- Telford, the engineer, 104
 Tell country, 289, 291
 Telugu, 233
 Temperature, 40, 50, 52
 Tenasserim, 243
 Tenedos Island, 268
 Tenerife Island, 327
 Teng-chow, 209
 Tengri-nor lake, 189, 220
 Ten-rio-gawa river, 228
 Tensift river, 290
 Teplitz, 127
 "Terai," the, 184, 228
 Terek, 198
 Pass, 219
 river, 198
 Ternate Island, 256
 Tessin, 131
 Tete, 315
 Teutonic States, 87
 Texel Island, 132
 Teyma, 276, 279
 Thames river, 81, 91
 Thar desert, 228
 Thaso, Island of, 166
 Thasos island, 268
 Theiss river, 122
 Thessaly, 167, 169, 175
 Thian-shan Mountains, 183
 Thian-shan pe-lu, 217
 Thompson River, 341
 Thomson, Sir Wyville, 55
 Thrace, 167, 169
 Three Rivers, 338
 Thun, lake, 129
 Thurgau, 131
 Thüringerwald Mountains, 78
 "Thurr," 183
 Tibbu, 296
 Tibbus, the, 296
 Tiber river, 153
 Tiberias, Lake of, 272
 Tibeati, 281, 296
 Tibet, 183, 185, 209
 Tibetans, 192, 220
 Ticino river, 129, 153
 Tides, 55
 Tidikelt, 296
 Tien-tsin, 209
 Tierra Caliente, 352
 Tierra del Fuego, 371
 Tierra Fria, 352
 Tierra Templada, 352
 Tiflis, 199
 Tigre, 303
 Tigris river, 182, 188, 269,
 270, 271
 Tilburg, 134
 Timaru, 462
 Timor, 308
 Timbuktu, 308
 Time, local, 25
 Timor Island, 255
 Laut Island, 256
 Tinneveli, 233
 Tioge river, 285
 Tipperah hills, 236
 Tiria, 296
 Tirmova, 172
 Titicaca, Lake, 330, 366
 Tiumen river, 214
 Tobago Island, 356
 Tobolsk, 201
 Tocantins river, 362
 Tokio, 224
 Toledo, 150
 Mountains, 145
 Tolima mountain, 358
 Tollpass, 80
 Tomsk, 201
 Tone-gawa river, 228
 Tonga island, 285
 Tongariro mountain, 381
 Tong-king, 247
 Topolias lake, 160
 Tornea river, 102
 Toronto, 338
 Torrens lake, 374, 379
 Torres Vedras Strait, 373
 Toulon, 142
 Toulouse, 141
 Touraine plain, 77
 Tournay, 136, 137
 Tours, 141
 Toweym, 279
 Trade winds, 54
 Trajan's wall, 163
 Tralee bay, 93
 Tramontana wind, 154
 Tranquebar, 238
 Trans-Baikal, 201
 Trans-Caspian province, 202
 Trans-Caucasia, 178
 Translation of the earth, 32
 Trans-Leithan Monarchy, 121
 Transvaal, The, 221
 Transylvania, 122, 128
 Transylvanian Alps, 79, 122
 Travankor, 238
 Traveller's tree, 325
 Travnik, 172
 Trebinje, 172
 Trebizond, 266, 275
 Trent, 127
 Triangulation, 26
 Trichinopoly, 238
 Trieste, 126
 Trikhala, 175
 Trincamali, 242
 Tringanu, 246, 247
 Trinidad Island, 329, 357
 Tripoli, 288, 293
 of Syria, 275
 Troihatta, 104
 Tropic of Cancer, 39
 of Capricorn, 40
 Troppau, 127
 Trujillo, 354
 Truxillo, 365
 Tsetse fly, 286, 307, 313, 322
 Tsian-po, 247
 Tsitsihar, 213
 Tu country, 296
 Tuamotu Islands, 385
 Tuareg, 296
 Tubingen, 120
 Tucacas, 360
 Tucuman, 369
 Tugela river, 320
 Tula, 178
 Tumbelan Islands, 252
 Tumets, 216
 Tundras, 77, 82, 176
 Tuganis, 202
 Tung-hai Sea, 205
 Tung-ting-hu, lake, 206
 Tungue, 313
 Tunguses, 192, 212
 Tunis, 288, 292
 Tunja river, 363
 Tupi Indians, 363
 Turanian lowland, 182
 Turcoman desert, 182
 Turgai, 202
 Turgurtha, 216
 Turin, 155, 157, 158
 Turkestan, see Turkistan
 Turkey, 172, 267
 people of, 85, 167, 173,
 192, 273
 Turkistan, 218, 260, 261, 262
 Turkomans, 264, 265
 Turkoman territory, 263
 Turnagain or Liard river,
 340
 Turtle Islands, 359
 Tuscans, 155
 Tuscany, 157
 Tuticorin, 238
 Tuz Gol, lake, 189, 272
 Twelve Pins mountain, 91
 Tycoon of Japan, the, 224
 Tyne river, 92
 Typhoons, 207, 247
 Tyre, 272
 Tyrol, 122, 126
 mountains of, 153
 Tyrrhenian Sea, 153
 Tzana, lake, 282, 302
 UCAVALI river, 364
 Udong, 249
 Uem-ul-Bilad, 262
 Ugrian Mongolians, 85
 Ujein, 239
 Ujji, 314
 Ukraine, 176, 178
 Uled Delem Tribes, 296
 Ulleswater, lake, 92
 Ulm, 120
 Umbria, 157
 Umbrians, 155
 Um-el-Rhea river, 290
 Umjamyenbe, 314
 Umzila (Chief), 323
 United States, 344
 Union Islands, Grenadines,
 British West Indies, 356
 Untamfuna river, 320
 Unterwalden, 131
 Unyamuei, 281, 314
 Unyoro, 301
 Upernavik, 335
 Ural mountains, 75, 80, 175
 Uralsk, 202
 Urfa, 275
 Urga, 216, 217
 Uri, 129, 131
 Urinia lake, 265

- Uruguay or Banda Oriental, 371
 river, 371
 Urumiah, lake, 189, 265
 Usbeys, 203, 262, 263
 Ush Turfan, 219
 Uskub, 175
 Uspallata Pass, 368
 Ussuri river, 212
 Ust Urt, Plateau of, 203
 Uutu river, 315
 Utah, Great Basin of, 346
 Utrecht, 133, 134
 (Africa), 322
- VAAL river, 284, 317, 321, 322, 323
 Valais, 181
 Valdsi Hills, 80, 176
 Valdivia, 368
 Valencia, 149, 150
 (Venezuela), 360
 Valenciennes, 141
 Valentia, 146, 149, 150
 Valetta, 159
 Valladolíd, 145, 150
 "Valle," region of Bolivia, 366
 Valparaíso, 368
 Van, lake, 189, 269, 272
 Vancouver, Captain, 341
 Island, 336, 341
 Van Diemen's Land, 380
 Vanua Island, 384
 Vapour, 59
 Varanger Fiord, 102
 Vardar river, 167
 Variation of the compass, 5
 Varna, 172
 Vasco de Gama, 313
 Vatna Jökull, 112
 Vaud, 131
 Vecht, 132
 Veddahs, 342
 Vellar, 238
 Venetia, 156
 Venetian lagoons, 154
 Venezuela, 359
 Venice, 158
 Vera Cruz, 353
 Veri, Cape, 280, 305
 Verga, Cape, 305
 Vernejo river, 368, 369
 Vesuvius (vol.), 79, 153
 Viatka, see Kazan
 Vicenza, 158
 Victoria, 373
 Falls, 284
 Hills, 374
 Lake, 301
 Nyanza, 282, 312, 314
 Regia, 332
 (Vancouver Island), 342
 Vienna, 124
 Vignobles, plains, 77
 Vigo Bay, 145
 Villa Rica, 371
 Vilna, 178
 Vindhya Mountains, 184, 229
- Virgin Island, 356
 Vistula river, 82, 114, 123
 Viti Islands, 383, 384
 Vizagapatam, 238
 Vlaardingen, 134
 Vladivostok, 301
 Vogelsberg mountains, 78
 Volcanic heights of Asia, 184
 Volga river, 80, 176
 Volta river, 307
 Voltiaks, 176
 Vöring Foss Falls, 103
 Vorarlberg, 127
 Vosges mountains, 79, 138, 139
- WAAL river, 132
 Wadal, 306, 309
 Wadi Draa, 290, 291
 Wadi Halfa, 299, 300
 "Wadia," African, 282
 Wady el Arabah, 270
 Wababis, 193
 Wajjauunne, Island, 256
 Waikato river, 381
 Wairau river, 381
 Waitaki river, 381
 Wakerstroom, 322
 Wakhan, 261
 Wakhis, 262
 Wa-Kwavi, 312
 Walachia, 163
 Walcheren, 182
 Waldeck, 118
 Waldenses, 155
 Wales, see British Isles, 96
 Wallfish Bay, 324
 Wallachians, 123
 Wallaroo, 379
 Wallis, 131
 Walloons, 114, 136
 Wa-Masai, 312
 Wami river, 284
 Wanganui river, 381
 Warragong mountains, 374
 Warrego river, 378
 Warsaw, 178
 Warsheikh islet, 313
 Wash, the, 90
 Washington City, 248
 Water, density of, 55
 interchange of, between
 the Pole and the Equator, 55
 Waterberg mountains, 321
 Waterburg, 322
 Waterford Harbour, 98
 Waterloo village, 137
 Waziris, 260
 Wear river, 92
 Wellesley, province, 250
 Wellington, town, 382
Wellingtonia gigantea, 346
 Wends, 114
 Wener lake, 104
 Weser river, 113
 West Indies, 355
 Wetter lake, 82, 84
 Wexford Bay, 93
- Whernside Hill, 90
 White Sea, 75
 Sea archipelago, 268
 River, 282
 Whitney, mount, 329
 Whydah, 327
 Wiborg, 178
 Wicklow mountains, 91, 93
 Widin, 172
 Wieliczka mines, 124
 Wien river, 125
 Wiesbaden, 117
 Wight, Isle of, 89
 Wild sheep, 89
 William mount, 374
 Wilna, 178
 Windermere lake, 92
 Windhoek, 324
 Winds, movements of trade
 53
 Windward Islands, 357
 Winnipeg lake, 330, 340, 341
 town, 341
 Wismar, 117
 Wito fishers, 303
 Woolaston lake, 340
 Worcester, 319
 World, population of, 66
 Württemberg, 120
 Würzburg, 119
 Wynberg, 319
- XERXES' canal, 166
 Xingu river, 362
- YABLONOI Mountains, 183, 200
 Yakoba, 308
 Yak Ox, 191
 Yakutsk, 190, 201
 Yangi-hissar, 219
 Yanan, 240
 Yang-tse-kiang river, 186, 206
 Yanina, 173
 Yantra river, 172
 Yao tribe, 207
 Yarkand, 219
 Yarkand-Daria river, 218
 Yarra-Yarra river, 377
 Yedo, 222, 224
 Yellala Falls, 284
 Yellow Sea, 205
 Yemen, 267, 268, 272, 275
 Yenisei river, 185, 200
 Yeniseisk, 201
 Yerba maté, 370
 Yeshil Irmak, river, 271
 Yezi, 266
 Yezo Island, 222, 225
 Yimes Field, 80
 Ylloilo, 257
 Yodo-gawa river, 223
 Yokohama, 224
 Yoma mountains, 243
 York Cape, 273
 plain of, 90
 Yorkshire Wolds, 90
 Yowaru, 308

Yssel river, 132	Zalsan lake, 185	Zirknitz, 126
Yu, province of, 221	Zambezi river, 281, 284, 314, 315	Zollverein, 116
Yukahires, 192	Zamboanga, 257	Zones, frigid, 41 temperate, 41
Yukon river, 330, 343	Zambos, 364, 366	Zoroaster, 194, 262
"Yungas" region of Bolivia, 366	Zante island, 160, 162	Zoutpansberg, 322
Yunnan, 207, 245	Zanzibar island, 312	Zug lake, 190, 191
Yun-nan Mountains, 186	sultanate of, 312	Zuider Zee, 132
Yusufzais, 260	Zara, 128	Zukkertoppen, 335
	Zarafshan river, 202, 263	Zulu Kafirs, 315, 318, 322, 323
ZAB, Greater and Lesser, rivers, 271	Zaragosa, 150	Zululand, 323
Zagros mountains, 271	Zealand island, 108	Zungares, 217
Zahrah or desert, 294	Zeeland, 135	Zungaria, 185, 202, 217
Zaidam plain, 220	Zella, 301	Zurich, 190, 191
Zaire river, 283, 309	Zenith, 25	Zvornik, 172
	Zermatt, 180	Zwartebergen Mountains, 316
	Zinguichor, 305	Zwickau, 118

THE END.



STANFORD'S NEW SERIES OF SCHOOL MAPS.

Used by Her Majesty's Government for the Army and Navy Schools, etc.; The Commissioners of National Education (Ireland); The principal School Boards, including those of London, Edinburgh, Birmingham, Bradford, Glasgow, Liverpool, Manchester, etc.; and the chief Educational Establishments of Great Britain and the Colonies.

THE "LARGE" SERIES.

Size of each Map, 50 inches by 58. Price, Mounted on Roller, Varnished, 18s.

World (Mercator).
 Eastern Hemisphere.
 Western Hemisphere.
 Europe.
 British Isles.
 England and Wales.
 London.
 Scotland.
 Ireland.
 Asia.

Holy Land.
 India.
 Africa.
 North America.
 South America.
 Australasia.
 Victoria (Australia).
 New South Wales.
 New Zealand.

The Hemispheres can also be had, mounted as one Map; size, 100 inches by 58.
 Price 26s.

THE "INTERMEDIATE" SERIES.

Size, 34 inches by 42. Price, Mounted on Roller, Varnished, 9s.

The British Isles.
 England and Wales.
 Scotland.
 Ireland.
 Old Testament (Palestine).
 New Testament (Palestine).

Acts and Epistles.
 Journeyings of the Children
 of Israel.
 Australia.
 New Zealand.

THE "SMALLER" SERIES.

Size, 27 inches by 32. Price, Mounted on Roller, Varnished, 6s.

Eastern Hemisphere.
 Western Hemisphere.
 Europe.
 British Isles.
 England and Wales.
 London.
 Scotland.
 Ireland.
 Asia.
 Holy Land.
 Old Testament (Palestine).

New Testament (Palestine).
 Acts and Epistles.
 Journeyings of the Children
 of Israel.
 India.
 Africa.
 North America.
 South America.
 Australia.
 New Zealand.

The Hemispheres can also be had, mounted as one Map; size, 54 inches by 32.
 Price, Coloured, on Roller, Varnished, 12s.

THE "EXTRA LARGE" SERIES.

The British Isles. Scale, 8 miles to an inch; size, 75 inches by 90. Price, Mounted on Roller, Varnished, 42s.

England and Wales. Scale, 3½ miles to an inch; size, 8 feet by 9 feet 6 inches.
 Price, Mounted on Roller, Varnished, 63s.

EDWARD STANFORD: 55 CHARING CROSS, LONDON, S.W.

GEOLOGICAL MAPS.

British Isles. By ANDREW C. RAMSAY, LL.D., F.R.S., Director-General of the Geological Surveys of the United Kingdom. Scale, $11\frac{1}{2}$ miles to an inch; size, 50 inches by 58. Mounted on rollers, varnished, 42s.

England and Wales. By ANDREW C. RAMSAY, LL.D., F.R.S., Director-General of the Geological Surveys of Great Britain and Ireland. This Map shows all the Railways, Roads, etc., and when mounted in case, folds into a convenient pocket size, making an excellent Travelling Map. Scale, 12 miles to an inch; size, 36 inches by 42. Fourth Edition, with Corrections and Additions. Price, in sheet, £1 : 5s.; mounted on linen, in case, £1 : 10s.; or on roller, varnished, £1 : 12s.

South-East England.—GEOLOGICAL MODEL of the SOUTH-EAST of ENGLAND and Part of France; including the Weald and the Bas Boulonnais. By WILLIAM TOPLEY, F.G.S., Geological Survey of England and Wales, and J. B. JORDAN, Mining Record Office. Scale, 4 miles to an inch horizontal, and 2400 feet to an inch vertical. Coloured and varnished in black frame, to hang up, £5; or packed in case for safe transit, £5 : 5s.

London and Suburbs.—STANFORD'S LIBRARY MAP of LONDON, Geologically Coloured by JAMES B. JORDAN, from the Maps of the Geological Survey. Scale, 6 inches to a mile; size, 65 inches by 76. Twenty-four sheets in a portfolio, £2 : 12 : 6; mounted in morocco case, or on roller, varnished, £4; spring roller, £6 : 6s.

London and its Environs. Scale, 1 inch to a mile; size, 24 inches by 26. Compiled from various authorities, by J. B. JORDAN, Esq., of the Mining Record Office. New Edition. Price, folded in cover, 5s.; mounted on linen, in case, 7s. 6d.; or on roller, varnished, 9s.

Ireland. Founded on the Maps of the Geological Survey of Sir Richard Griffith and of Professor J. B. Jukes. By EDWARD HULL, M.A., F.R.S., Director of H.M.'s Geological Survey of Ireland. Scale, 8 miles to an inch; size, 31 inches by 38. Price, in sheets, 25s.; mounted on linen, in case, 30s.; on rollers, varnished, 32s.

STANFORD'S NEW OROGRAPHICAL SERIES OF WALL MAPS.

For Use in Schools and Collèges. Edited by A. C. RAMSAY, LL.D., F.R.S., etc., Director-General of the Geological Surveys of the United Kingdom.

This series of Orographical Maps has been prepared in order to supply the want of good and reliable scientific maps long felt in Schools where Physical Geography is taught. The Maps are uniform in scale and size with the Political Series already in use, and which have acquired so great a popularity; and will be found as accurate and useful in teaching Physical Geography as the companion series are in Political Geography.

The following are ready, size, 50 inches by 58, mounted on rollers and varnished, each 30s.—

British Isles.	Europe.	North America.
England and Wales.	Asia. Africa.	South America.
Also, size 34 inches by 42, mounted on rollers and varnished, each 18s.—		
Scotland.		Ireland.

EDWARD STANFORD : 55 CHARING CROSS, LONDON, S.W.

DIAGRAMS OF NATURAL HISTORY.

These Diagrams, compiled by the eminent Scientific Men whose names are appended, are drawn with the strictest regard to Nature, and engraved in the best style of art. The Series consists of Eleven Subjects, each arranged so that it may be mounted in one sheet, or be divided into four sections and folded in the form of a book, thus rendering them available either for Class Exercises or Individual Study.

Price of each, mounted on roller and varnished, 6s.; or folded in book form, 4s.

- I. **Characteristic British Fossils.** By J. W. LOWRY, F.R.G.S. Exhibits nearly 600 of the more prominent forms of Organic remains found in British Strata.
- II. **Characteristic British Tertiary Fossils.** By J. W. LOWRY, F.R.G.S. This Diagram is similarly arranged to No. 1, and illustrates upwards of 800 specimens of the Tertiary Formation.
- III. **Fossil Crustacea.** By J. W. SALTER, A.L.S., F.G.S., and H. WOODWARD, F.G.S., F.Z.S. Consisting of about 500 Illustrations of the Orders and Sub-Orders, and showing their Range in Geological time.
- IV. **The Vegetable Kingdom.** By A. HENFREY. Arranged according to the Natural System, each Order being illustrated by numerous examples of representative species.
- V. **The Orders and Families of Mollusca.** By Dr. WOODWARD. Represented in six classes :—Cephalopoda, illustrated by 20 examples ; Gasteropoda, 4 Orders, illustrated by 180 examples ; Pteropoda, illustrated by 18 examples ; Conchifera, illustrated by 158 examples ; Brachiopoda, illustrated by 11 examples ; and Tunicata, illustrated by 20 examples.
- VI. **Myriapoda,—Arachnida,—Crustacea,—Annelida,—and Entozoa.** By ADAM WHITE and Dr. BAIRD. The numerous Tribes represented under these Orders are illustrated by upwards of 180 examples, including Centipedes, Spiders, Crabs, Sandhoppers, Seamice, Serpulas, Leeches, etc.
- VII. **Insects.** By ADAM WHITE. Contains nearly 250 drawings of the different Orders :—Coleoptera ; Euplexoptera ; Orthoptera ; Thysanoptera —Thripidae, etc. ; Neuroptera ; Trichoptera ; Hymenoptera ; Strepsiptera —Hylechthrus rubis ; Lepidoptera ; Homoptera—Heteroptera ; Diptera ; and Aphaniptera.
- VIII. **Fishes.** By P. H. GOSSE. Showing over 130 of the most conspicuous types, arranged in their Orders and Families.
- IX. **Reptilia and Amphibia.** By Drs. BELL and BAIRD. Contains 105 figures of the principal typical forms.
- X. **Birds.** By GEORGE GRAY. Contains drawings of 236 of the leading illustrative specimens.
- XI. **Mammalia.** By Dr. BAIRD. Exhibits 145 of the chief illustrations selected from the several Orders.

Also, uniform in Price.

Table of British Sedimentary and Fossiliferous Strata.

By HENRY WILLIAM BRISTOW, F.R.S., F.G.S., Director of the Geological Survey of England and Wales. The Description of Life Groups and Distribution by R. ETHERIDGE, F.R.S. Second Edition, revised.

EDWARD STANFORD : 55 CHARING CROSS, LONDON, S.W.

NEW EDUCATIONAL WORKS.

Life and Her Children: Glimpses of Animal Life from the Amœba to the Insects. By ARABELLA B. BUCKLEY, Authoress of "The Fairy Land of Science," "A Short History of Natural Science," "Botanical Tables for the Use of Junior Students." Seventh Thousand. Crown 8vo, with upwards of 100 Illustrations, cloth gilt, gilt edges, 6s.

A Short History of Natural Science, and of the Progress of Discovery from the Time of the Greeks to the present Day. For the Use of Schools and Young Persons. By ARABELLA B. BUCKLEY. Second Edition. Crown 8vo, with 77 illustrations, cloth, 7s. 6d.

The Fairy Land of Science. By ARABELLA B. BUCKLEY. Tenth Thousand. Crown 8vo, with 74 illustrations, cloth gilt, gilt edges, 6s.

Science Teachings in Living Nature; being a Popular Introduction to the Study of Physiological Chemistry and Sanitary Science. By WILLIAM H. WATSON, F.C.S., F.M.S. Crown 8vo, cloth, 3s. 6d.

Atlas of Anatomy; or Pictures of the Human Body, in 24 Quarto Coloured Plates, comprising 100 separate Figures, with Descriptive Letterpress, by Mrs. FENWICK MILLER, Member of the London School Board, Author of the Physiological Sections of "Simple Lessons for Home Use," etc. Second Edition. Fcap. folio, 12s. 6d.

Chemistry for Schools: An Introduction to the Practical Study of Chemistry. By C. HAUGHTON GILL, late Teacher of Chemistry and Experimental Physics in University College School. With 100 Illustrations. Fifth Edition. Crown 8vo, cloth, 4s. 6d.

Botanical Tables for the Use of Junior Students. Table of Common Terms used in Describing Plants, comprising those usually required in the Cambridge Local Examinations for Juniors. Also a Table of the Chief Natural Orders of British Plants, arranged according to BENTHAM and OLIVER. By ARABELLA B. BUCKLEY. Third Edition. Folded in Cloth Cover, 1s. 6d.

Botany for Children. An Illustrated Elementary Text-Book for Junior Classes and Young Children. By the Rev. GEORGE HENSLOW, M.A., F.L.S., F.G.S., Author of "Floral Dissections." Third Edition. With 32 Full-page Illustrations. Post 8vo, cloth, 4s. A few copies with the Illustrations hand-coloured, cloth gilt, gilt edges, 14s.

Floral Dissections, illustrative of Typical Genera of the British Natural Orders. Lithographed by the Rev. GEORGE HENSLOW, M.A., F.L.S., F.G.S. For the Use of Schools and Students in Botany. Eight Plates, containing many hundred Illustrations. Demy 4to, with Descriptive Letterpress, boards, 4s.

EDWARD STANFORD: 55 CHARING CROSS, LONDON, S.W.

NEW EDUCATIONAL WORKS.

The Physical Geology and Geography of Great Britain.

By ANDREW C. RAMSAY, LL.D., F.R.S., Director-General of the Geological Surveys of the United Kingdom. Fifth Edition, greatly Enlarged. Post 8vo, with Geological Map printed in Colours, and numerous Additions, Illustrations of Fossils, Sections, and Landscapes, price 15s.

The Physical Geology and Geography of Ireland.

Part I., Geological Formation of Ireland; Part II., Physical Geography of Ireland; Part III., The Glaciation of Ireland. By EDWARD HULL, M.A., F.R.S., Director of the Geological Survey of Ireland, Author of "The Coal Fields of Great Britain," etc. With Maps and Illustrations. Post 8vo, cloth, 7s.

A Geological Section. Showing the Order of Superposition and Approximate Maximum Thickness of Sedimentary Strata in the British Islands. By JAMES B. JORDAN. Scale, 3000 feet to 1 inch; size, 11 inches by 40. Folded in Wrapper, 4s.; on Rollers, varnished, 6s.

Geological Glossary for the Use of Students. By the late THOMAS OLDHAM, LL.D., F.R.S., formerly Superintendent of the Geological Survey of India. Edited by R. D. OLDHAM, Associate of the Royal School of Mines. Large Post 8vo, cloth, 2s.

Conversations with Little Geologists on the Six Days of Creation. Illustrated with a Geological Chart. By J. W. GROVER, C.E. Imperial 4to, cloth, 6s. The Chart can also be had separately, 3s. in Sheet, or 5s. 6d. on Rollers, varnished; the Letterpress separately, 2s.

Rudiments of Geology. By SAMUEL SHARP, F.S.A., F.G.S. Part I.—Introduction and Physical. Part II.—Stratigraphical and Palæontological. Second Edition, Revised and Enlarged. Crown 8vo, cloth, price 4s.

Geography for Little Children. By ANTONIA ZIMMERN. Second Edition. Post 8vo, with 40 Maps and Illustrations, cloth, 1s.

Physical, Historical, Political, and Descriptive Geography.

By KEITH JOHNSTON, F.R.G.S., Editor of the Africa volume in "Stanford's Compendium of Geography and Travel," late Leader of the Royal Geographical Society's East African Expedition. Second Edition. Large post 8vo, with Illustrations and 21 Maps, cloth, 12s.

Notes on the Geography of Europe, Physical and Political.

Intended to serve as a Text-Book for the use of Elementary Classes. By WILLIAM RICE, F.R.G.S. Crown 8vo, limp cloth, 9d.

Notes on the Geography of North America, Physical and Political.

Intended to serve as a Text-Book for the use of Elementary Classes. With Coloured Map. Crown 8vo, limp cloth, price 1s.

Notes on the Geography of South America, Physical and Political.

Intended to serve as a Text-Book for the Use of Elementary Classes. With Coloured Map. Crown 8vo, limp cloth, price 1s.

EDWARD STANFORD: 55 CHARING CROSS, LONDON, S.W.

ELEMENTARY ATLASES.

Elementary Physical Atlas, intended chiefly for **MAP DRAWING**, and the Study of the Great Physical Features and Relief Contours of the Continents, with an Introduction to serve as a guide for both purposes. By the Rev. J. P. FAUTHORPE, M.A., F.R.G.S., Principal of Whitelands Training College. Tenth Edition. Sixteen coloured Maps with descriptive letterpress containing Hints on Map Drawing, etc. Price 4s.

CONTENTS.

CHAPTER I. HINTS ON MAP DRAWING. 1. The Scale of Projection. 2. The Outline. 3. Mountain Ranges. 4. Tablelands, etc. 5. Rivers. 6. Coast Line, shading of, etc. 7. Towns. 8. Names on Maps. 9. Sections. CHAPTER II. MERCATOR'S PROJECTION.	CHAPTER III. ON THE SHAPE AND POSITION OF THE LAND MASSES. 1. Land and Water. 2. Great Land Masses or Continents. 3. Islands. 4. Mountains, Tablelands, etc. 5. Elevations of the Continents. 6. Peculiar Features of the Continents. CHAPTER IV. NOTES ILLUSTRATING MAPS. On Map 1. World on Mercator's Projection.	On Map 2. South America. 3. North America. 4. Africa. 5. Asia. 6. Europe. 7. Central Europe. 8. British Islands. 9. England & Wales. 10. Scotland. 11. Ireland. 12. Hindostan. 13. Cape Colony. 14. Australia. 15. British America. 16. Palestine and adjacent countries.
---	--	--

Outline Atlas: Containing Sixteen Maps. Intended chiefly for use with the Elementary Physical Atlas. By the Rev. J. P. FAUTHORPE, M.A., F.R.G.S., Principal of Whitelands Training College. Coloured Wrapper, 1s.

Projection Atlas: Containing Sixteen Plates of Projections. Intended chiefly for use with the Elementary Physical Atlas. By the Rev. J. P. FAUTHORPE, M.A., F.R.G.S., Principal of Whitelands Training College. Coloured Wrapper, 1s.

Blank Sheets for Maps: Sixteen Leaves of Blank Paper for Map Drawing. Intended chiefly for use with the Elementary Physical Atlas. By the Rev. J. P. FAUTHORPE, M.A., F.R.G.S., Principal of Whitelands Training College. Coloured Wrapper, 6d.

These Two may be had together in alternate pages, if specially ordered. Coloured wrapper, 1s. 6d.

Physical Atlas: Atlas containing a series of Twelve Maps for Map Drawing and Examination; size of each Map 10½ by 13½ inches. By CHARLES BIRD, B.A., F.R.A.S. Price 4s. 6d.

Europe.	North America.	Scotland.	Germany.
Asia.	South America.	Ireland.	India.
Africa.	England.	France.	Australia.

This Atlas has been drawn up as an aid to the systematic teaching of the elements of Geography in large classes, and in the belief that the groundwork of a knowledge of Geography must be laid in an accurate familiarity with leading physical features and topography. At the same time, it is hoped it will be of great use to candidates preparing for the Universities, local, and other examinations. The Atlas may be used either for map drawing or general class work.

The Instructive Atlas of Modern Geography, intended for the use of Young Pupils. Containing Seventeen Coloured Maps, each 17 inches by 14. Fcap. folio, 7s. 6d.

CONTENTS.

WORLD, MERCATOR. EASTERN HEMISPHERE. WESTERN HEMISPHERE. EUROPE. ENGLAND AND WALES. SCOTLAND.	IRELAND. ASIA. HOLY LAND. INDIA. AFRICA.	SOUTH AFRICA. NORTH AMERICA. CANADA. SOUTH AMERICA. AUSTRALIA. NEW ZEALAND.
--	---	--

"This new Atlas cannot fail to become a popular one. It is evidently designed with a view to making it not so much a work of reference as an aid to the teacher. The individual maps, of which there are seventeen, are beautifully bold in outline, are not crowded with a host of unnecessary names, and are so clear and distinct that no difficulty whatever will be experienced in deciphering any single name. All the Maps are brought down to the present date, Western Europe and South Africa especially receiving that careful attention at the hands of the compiler for which the firm of Stanford is so well known."—*School-master.*

EDWARD STANFORD: 55 CHARING CROSS, LONDON, S.W.

GEOGRAPHICAL READERS FOR ELEMENTARY AND MIDDLE CLASS SCHOOLS.

By CHARLOTTE M. MASON,

Authoress of 'The Forty Shires, their History, Scenery, Arts, and Legends.'
Post 8vo, cloth, illustrated with numerous Maps and Woodcuts.

Each book affords a complete and connected view of the subjects for each year's work. The matter is of an interesting character, conveyed in an easy, readable style. The language is simple, with a view to promote fluent reading. A very special feature of the work is, that the letterpress is completely illustrated by clear Maps. Each Map is accompanied with a carefully-prepared map exercise, to guide the children in classifying facts, and in making for themselves the lists of names usually learned from text-books. It is felt that without this kind of systematic use of maps, the facts of Geography cannot be satisfactorily learned from Reading Books.

BOOK I.

ELEMENTARY GEOGRAPHY. Illustrated. 124 pages, price 1s.

Very simple Reading Lessons upon the lines laid down by the Code of 1879. An effort is made to treat the subject with the sort of sympathetic interest and freshness which should attract children to a new study.

"The lessons are written in a flowing and attractive style, and technical names are not needlessly introduced. The explanation of a map seems to us particularly good. The children are introduced successively to a plan of the schoolroom, a plan of a town, and a map of a county."—*School Guardian*.

BOOK II.

THE BRITISH EMPIRE and the GREAT DIVISIONS of the GLOBE. With numerous Pictorial Illustrations. 200 pages, price 1s. 6d.

Easy Reading Lessons on the Chief States and Regions of the World, to make children familiar with the Map of the World, and with a few of the leading facts of Geography. The parts of the British Empire are treated in detail; these, being widely scattered, are best studied in connection with the divisions of the earth to which they belong.

BOOK III.

THE COUNTIES of ENGLAND. Illustrated by Maps on a uniform Scale. 315 pages, price 2s. 3d.

A notice of the general aspect of each County: Interesting Reading Lessons on the Aspect, Industries, and History of the several Counties.

This Book is offered for Standard IV., because the Geography of England embraces such various knowledge that it appears to be a subject more fitted for the intelligence of children of ten and eleven, than for the younger children in Standard III.

Classes which have been examined upon "England" in Standard III. may use this Reading Book with advantage for Standard IV. The Lessons are upon new lines, and will be found to possess the attractive interest of a fresh subject of study, while tending to fix what the children already know.

"To the scores and scores of friends who from time to time have asked us to recommend a manual which in a brief form presents full and reliable information of the English counties, we say, here is the very book."—*Practical Teacher*.

BOOK IV.

EUROPE.

[Preparing.]

BOOK V.

ASIA, AFRICA, AMERICA, and AUSTRALASIA.

[Preparing.]

EDWARD STANFORD: 55 CHARING CROSS, LONDON, S.W.

**STANFORD'S
COMPENDIUM OF GEOGRAPHY AND TRAVEL
FOR GENERAL READING,**

BASED ON HELLWALD'S "*DIE ERDE UND IHRE VÖLKER.*"
WITH ETHNOLOGICAL APPENDICES BY A. H. KEANE, M.A.I.

A Series of Volumes descriptive of the Great Divisions of the Globe.

"Stanford's Compendium of Geography and Travel' promises to be one of the most important works on general geography published in this country for many years."—*Times.*

Asia.

Edited and Extended by

Sir RICHARD TEMPLE, Bart., G.C.S.I., C.I.E.

Large post 8vo, with Maps and Illustrations. Cloth gilt. [Nearly Ready.]

Africa.

Edited and Extended by **KEITH JOHNSTON, F.R.G.S.,**

Author of "Physical, Historical, Political, and Descriptive Geography;" late Leader of the Royal Geographical Society's East African Expedition.

Second Edition, large post 8vo, with 16 Maps and Diagrams, and 68 Illustrations. Cloth gilt, 21s.

Australasia.

Edited and Extended by **ALFRED R. WALLACE, F.R.G.S.,**

Author of "The Malay Archipelago," "Geographical Distribution of Animals," etc.

Second Edition, large post 8vo, with 20 Maps and 56 Illustrations.
Cloth gilt, 21s.

*Central America, the West Indies, and
South America.*

Edited and Extended by **H. W. BATES,**

Assistant-Secretary of the Royal Geographical Society; Author of "The Naturalist on the Amazon."

Large post 8vo, with 13 Maps and 73 Illustrations. Cloth gilt, 21s.

"EUROPE" and "NORTH AMERICA"

In the Press.

EDWARD STANFORD: 55 CHARING CROSS, LONDON, S.W.



